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PERCEPTIONS OF RISK,  
INCENTIVES AND  
SITUATIONAL INFLUENCES  
IN YOUNG CLIMBING GROUPS.

*BY*

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## ABSTRACT

The research has sought to shed light on decision making among climbing groups while on expedition by identifying and correlating the major factors that affect it. Perspectives from the psychology of group dynamics and decision-making provide the theoretical basis for investigation. All data were gathered from climbers during actual mountain expeditions. The study is thus a naturalistic one rather than being laboratory based.

The main study investigated young mountain climbers from the standpoint of how they perceived themselves and how they perceived the operation of the whole group of which they were a member. A picture was constructed on the basis of three factors: Incentive or what draws the climber to the top; Risk, or what limits the response to that incentive, and Situation, or what real world constraints are operative at the time.

To provide a psychological profile of the climber while actually undertaking an expedition an intervention method of data gathering was implemented. This consisted of questions administered on four occasions: one: while still at base "setting out"; two: "en route" after a significant part of the expedition had been completed; three: on the summit, or when the objective or goal had been achieved, and four: when the group had returned to base.

Subjects were between the ages of 13 years to 18 years from 14 schools. Data were collected over a period of 10 weeks during week-long residential outdoor activity courses.

A comparison of ratings of the three concepts, Risk, Incentive, and Situation over the stages of the climb both for the Individual and the Group highlighted several findings:

1. Climbers' feelings about the strength/importance of risk acceptance and of incentive concepts increased as the climb progressed, but dipped at the completion of the climb. Situational factors varied throughout the climb.

2. The climbers backgrounds had varying influences on their responses across the climb. Some explanatory variables, such as level of experience, ability and fitness provided no differentiation, while others such as group status, commitment, risk level and weather conditions made a consistent contribution.
3. Individuals perceived the group's point of view differently from their own.
4. Incentive, risk and situational similarities between stages for climbers' own ratings varied in strength across the climb.
5. The predictions of responses for the next stage were consistently underestimated or at least mis-estimated, and seemed bound by current - state responses.
6. These predictions were particularly adrift for risk and incentive, though fairly accurate for situational factors.
7. The evaluations made about the group were consistently higher throughout the climb than the evaluations made by climbers about themselves showing that the group was perceived to have higher incentive levels and was more willing to take risks than the individual.



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# CHAPTER ONE

## INTRODUCTION.

### 1.1. THE IDEA OF 'RISK'.

What happens in small groups and in particular mountain groups, when decisions are being made? There is considerable ignorance as to the mechanism of decision making, the various influences on groups and the perception of risk. The premise of this research is that such questions have an interest and a promise of worthwhile findings that has not been fully recognised. The researcher felt there were thus grounds for combining theoretical interests in social psychology with the practical elements of mountaineering. Theory could then be viewed in a field study where decisions and psychological influences would occur naturally and spontaneously, rather than in the artificial situation of the laboratory. (Frazer, 1978) This opening discussion presupposes for the moment an understanding of what risk is and its nature in adventure activities. A theoretical concept of risk needs to be established to enable a generalisation to be made for different situations.

Stoner (1961) and subsequent researchers made an early relevant point that groups make more risky decisions than individuals. Thus the "risky shift" phenomenon was born with its ensuing literature. The idea of the risky shift is that "group consensus regarding the degree of risk to be taken in 'life dilemma' situations deviated from the average of pre-discussions in the direction of greater risk-taking." (Wallach, Kogan and Bem, 1962). To some extent the risky shift literature and the findings of the present researcher have confirmed the truth in Stoner's earlier investigation, but in not so clearcut a way as he described. Moscovici (1969) and Lamm and Myers (1978) found the phenomenon to be more generalised, e.g. that shifts could be found to polarize either to the risky or to the cautious.

It is in situations, where the correct course of action is not so clear; in real situations, where decisions are made in the natural environment, in adverse conditions and not in the warmth of the laboratory, that investigations need to be carried out.

This point can be illustrated from the researcher's own experience, when two quite differing responses were made in similarly adverse conditions.

The first variant demonstrated a common-sense approach to the situation. Everybody was aware of the severity of the critical position and thought out the courses of action open to them. The decisions were strongly influenced by a team spirit and common concern for the individual within the group where attention was centred on the weakest members. The level of risk then adopted was not that associated with the most competent, but with the least. Steiner (1972) says this is in keeping with "conjunctive" tasks where each member of the group must accomplish the task in order for the group as a whole to be successful. In this case the group's productivity depends upon the performance of the least competent member so the wishes of the majority are subservient to the crisis, thereby ensuring that all survive safely.

A second variant also taken in adverse conditions was for the group to shift the responsibility for making decisions from the group as a whole on to an individual or pair who were thought to be the most competent or experienced for the situation at hand. Discussion ceased and the group put their trust in the competence and ability of emergent leader(s) who had the sole right for decision making and for consultation if deemed necessary.

In peer-group expeditions, then, these new leaders normally demonstrate competence and awareness of the needs of the whole group, including those of the weakest member. The leaders try to lift morale and maintain enthusiasm. Mikula and Walter (1969) in their longitudinal study of a four-man expedition observed a similar finding. In the present researcher's experience any emergent leader always adopts a non-risk and indeed cautious approach ensuring a safe and sound return of the group.

The problem is for the group to understand the process of decision making, so that the right decision can be made. In a climbing context if a decision is too risky then the safety of the group could be jeopardized. Conversely if a decision is too cautious then the challenge might be

removed from the adventure and members of the group could feel that they had achieved very little from their experience, which would erode the value of the activity. The need is evidently to find the balance between a course of action which is not too risky to compromise safety, but of sufficient risk to maintain interest.

Does the risk-safety link warrant concern? Some of the researcher's recent observations have highlighted problems of safety, arising from an unrecognised and indeed non-obvious shift of responsibility from leaders to climbers themselves. This was in unaccompanied groups sent by the Duke of Edinburgh Award Scheme, Scouts and Outward Bound Schools into hostile environments to cope with a full-scale expedition. Teachers and leaders would be somewhere in the vicinity to exercise general supervision but not actually with the groups during the expeditions. This meant that groups were exposed to making their own decisions. If Stoner's (1961) and subsequent researchers' findings are valid, to the effect that groups make more risky decisions than individuals then perhaps a potential safety problem was being engendered by the very people who were advocating safe practice.

## **1.2. ACCOMPANIED AND UNACCOMPANIED GROUPS.**

Groups that have a teacher or leader accompanying them generally leave the decision making to the teachers. Even the goals and aspiration levels, which underpin an expedition are typically set by the leaders. Some teachers/leaders may appear to give a free-hand to the group, but intervene when any important safety decision needs to be made. This seems acceptable, causing no real problems. After all, it is not the group that is making the critical decision, it is an experienced trained leader. Even when groups are allowed to be in full control of their own course of action, the mere presence of a teacher/leader can influence the decision making process of the group (Wankel, 1984). On the surface this might seem a good thing as far as the safety of the group is concerned. Whether this is deemed desirable for the participant's total educational experience is another matter.

What is disturbing is the influence that the leader can have on the group perhaps without knowing it. Normally the level of risk any group is willing to take is matched to members' experience, competence and expertise. This could mean that the accepted risk is set too close to the level of the most competent, most experienced group members thus giving credence to Stoner's (1961) findings. However, the accompanied group of course has a leader to help and give guidance. But this leader is also a member of the group and instead of group members investing confidence in their own ability to make decisions, they invest their confidence in the ability of the teacher/leader to make judgments and they come to rely upon his competence, his decision making ability. This could be a potential problem in that groups of young people will be more willing to encounter dangerous situations safe in the knowledge that their leader "will not allow" them to come to any harm. Thus, by having absolute faith in their leader the group could be willing to take on more challenge and consequent risk than they are really capable of handling. The onus of responsibility and inevitable accountability rests firmly on the shoulders of the teacher/leader. Most teachers/leaders recognise this clearly; but are they fully aware of the possibilities that groups might follow them unquestioningly to "the ends of the earth"?

The number of accidents that have happened to date is small, given the present numbers going out into the mountains, but if the numbers increase and the less well trained venture out, then the hazard potential is likely to increase. What will be needed, in fact, will be a greater awareness of the dangers, the difficulties and what constitutes a hazardous situation, for a particular group - and therefore also an accurate assessment of that group's competence. This awareness, and an attendant ability to predict are centrally important factors in the "group management" of mountain situations. These factors then need closer scrutiny and study, especially in the context of increasing numbers of people undertaking outdoor activities.

Normally, before any leaderless group is allowed to tackle an expedition its members undergo a strict apprenticeship in mountaineering. Country codes, ethics and sound principles of good practice are learnt.

Goals and aspiration levels are set during the planning stage in relation to the participants' experience and the requirements of the organisation. e.g. Scouts, Duke of Edinburgh Award. The procedures for safe practice will be learnt thoroughly through preparatory small scale expeditions. Appropriate training, careful planning, precise briefing, the use of regular check points and the ability to think problems through, will have been encouraged. When a full-scale expedition is eventually undertaken the progress of groups will be monitored throughout; there will always be expert guidance and immediate safety back up in the field, but the onus of decision making and the ultimate success of the venture will rest in the group's own hands.

### **1.3. RISK AND HAZARD.**

There will of course be a number of minor decisions to be made at the planning stage. These will be, normally, of little consequence, so far as safety is concerned, but the whole group will share in them and will share responsibility for the courses of action chosen. It is during the climb that decisions of distinct importance for safety may need to be made, particularly if the situation suddenly changes or something unforeseen occurs. Poor navigation could result in a group being lost, a frequent occurrence. Weather conditions can change an easy walk into a treacherous one in minutes. Even the fittest group can be brought to a halt by heavy rain, poor visibility or strong winds. What should the group do? Do they continue with their planned route despite the conditions or do they take an easier route or just abandon the expedition?.

The important point to realize here is that these decisions do not occur in a games context, they are not made by actors in a play, rather these are decisions that could have life or death consequences. Accordingly all members of a group must be able to assess situations rationally and carefully. Original aspirations, preset goals and preconceived ideas of their own importance will feature in the individual thinking of group members, but they all know that clear rational thinking is necessary if the group is to decide on the right course of action. It is

of vital importance too that they realize that fatigue and hunger can cloud rational thinking or that the cold and wet can lower morale to the point where sound judgments are less likely to be made.

In the light of the foregoing discussion it can be seen that risk taking and more generally the structure of decision making of organised groups merits further research. The mechanisms of decision making need a fuller investigation to include the case of groups with and without leaders. Even the nature of the word 'risk' could be more critically analyzed, taking into account that what is 'risky' for one climber may be 'cautious' for another. Certainly, the various influences which have a bearing on the individual's and the group's perceptions of risk and the situation need to be more clearly identified and quantified. Perhaps then, what happens in mountain groups can be identified on empirical grounds rather than by conjecture.

It was with these thoughts in mind that the enquiry was carried out.

#### **1.4. THE ENQUIRY**

The enquiry is seen by the researcher as a developing one, with decision-making and risk-taking in the early part of the work being of central importance. A conceptual framework for risk is presented and discussed in Chapter 2. while Chapter 3. describes a series of earlier studies undertaken to examine group influences on individual risk-taking. These early investigations should be seen as a preliminary to the main study and as much about the researcher gaining experience and theoretical understanding, as yielding substantial findings that might be carried forward. Although detailed data are available, it was inappropriate to report them to avoid giving the impression they were more important than they in fact were. They are therefore reported in brief to show how two main benefits from these early studies emerged, the one conceptual, the other methodological.

From Chapter 4 and 5 the thrust of the enquiry begins to change. Conceptually it becomes desirable to recast the research questions in terms not just of risk but also of incentive and situational factors, and to see linkages across the stages of the climb using both current status

questions and questions relating to predictions about the ensuing climb. Chapter 6 introduces the rationale for the main study through a scene setting' approach followed by the actual design in Chapter 7. Essentially the main study develops a psychological profile of the climber within the group while actively undertaking an expedition.

### **1.5. ANALYSIS AND MODELLING OF THE DATA.**

The design of the study represents individuals in groups in terms of various instructor-rated variables (age, experience and so on) then plots their responses to questions over the expedition. Thus a time base is built into the design, and the link between current and predicted estimates can be tracked over the whole climb, as can the varying role of the classifying or instructor-rated variables at each stage. In addition the climbers' own ratings at each stage are entered into the analysis to explore any causal links between stages. However the nature of the enquiry indicated less concern for the proportioning of variance and more for the simple demonstration of pathways. Such a design which seeks correlation and causal linkages among repeated measures over time is ideally suited for some form of multiple regression analysis to identify pathways through the data. It should be noted that such use of multiple regression techniques is more heuristic than strictly explanatory. The chosen procedure uses stepwise selection of independent variables while the beta coefficient is used to determine the significant variables from that selection.

### **1.6. HYPOTHESES.**

The hypotheses have been cast within a series of research questions each representing a component of the overall research problem. These questions and hypotheses are as follows:

1. What stability and change exists in climbers' assessments over the course of the climb?
  - a) climbers' will show increasing coherence over the climb in their view of themselves, of the group and of the environmental conditions.
  - b) the intensity or perceived importance of incentive and risk acceptance of the ratings will increase as the climb

- c) differences will be found throughout the climb between perceived group ratings and self ratings.
- d) climbers' perception of the group in relation to incentive, risk and situational factors will change with the developing climb.

2. Is there differentiation according to instructor ratings?

- a) biographical variables such as gender, age, school type will show no significant differentiation of climbers' self-assessments.
- b) personal attributes (instructor-ratings) of experience, ability, fitness and commitment will be significant discriminators of the climbers' self-assessments.
- c) group status, instructors' prior ratings of route difficulty and weather conditions will again be reflected in climber self-assessments.
- d) instructor-ratings (explanatory variables) will have varying influence on climbers' group viewpoint across the climb.

3. Can climbers predict Incentive, Risk, and Situational factors later in the climb?

- a) climbers' predictive ability will be poor.
- b) climbers' physical estimates will be more consistent than psychological estimates.
- c) group predictive ability will be less consistent than individual predictive ability.

4. What limits climbers' predictive ability?

- a) some limitations will be imposed on predictive ability of climbers by methodological constraints.

For the reader's convenience, these research questions and hypothesis are repeated immediately before the study (p129).



# **CHAPTER TWO**

## **RISK-TAKING FACTORS.**

### **2.1. THE IDEA OF RISK.**

Risk is such a familiar term in everyday life that most people have a notion of what it is without actually being able to define it.

Thus when one attempts a single definition of risk one immediately becomes aware that a multidimensional approach would be more appropriate. This is particularly so when one views the numerous methods adopted to measure risk. For example, Slovic, (1962;1964) found that risk in one situation had little or no bearing on what governs risk in another. Bonington (1982) describes risk colourfully: "It is a hot, heady spice, a piquancy that adds an addictive flavour to the game." For Wallach, Kogan and Bem (1962) risk is, " the extent to which the decision maker is willing to expose himself to possible failure in the pursuit of a desirable goal." Meier (1978) agrees and says "risk is an expression of possible loss. It should be understood that risk-taking is influenced by an evaluation of the odds." All high-adventure risk recreation activities, says Miles (1978), involve elements of uncertainty.

What is in general evident from the writing of Cohen and Christensen (1970), Bonington, (1982); Mitchell, (1980) Helm (1984) and others is that one associates risk with some uncertainty. Now clearly to understand risk one needs to locate where that uncertainty lies. Wallach and Kogan (1967) say it lies in the situation, in the person and in the interaction between the risk taker and the situation. Cohen and Christensen (1970) say a common feature to any risk taking situation is the degree of uncertainty and go on to say a "typical definition of risk could be behaviour in situations where there is a desirable goal and a

lack of certainty that it can be obtained."

In mountaineering the climber is confronted with a number of uncertainties two of which are danger and difficulty. Mitchell (1980) defines danger by saying it, " refers to situations in which the probabilities of dire outcomes are not possible to estimate with any accuracy in advance; nor are those dire events necessarily within the climber's ability to surmount should they be met. Rock fall, snow avalanche, and lightning are dangers encountered by mountaineers."

Cohen and Christensen (1970) and Helm (1984) and others refer to these as hazards. "Difficulty refers to risks in which estimates of outcomes can be made by comparisons of the problem at hand and resources in terms of skill, experience, strength, equipment, and time available." Mitchell goes on to point out that, "danger is avoided whenever possible; difficulty is prepared for by learning safety techniques, use of proper equipment, and careful planning. The attraction of the mountains lies in seeking and meeting difficulty to the limits of one's ability, not going beyond it." Thus to reach the top can be the least of the climber's objectives. "Mountaineering is an uncertain enterprise where the uncertainty which is sought is the limits of one's skill and ability." (Mitchell, 1980) Most climbers would deem this the essence of risk-taking, Helm (1984) and White (1978)

The following quote from Rebuffat (1957, p 57) aptly puts the mountaineer's attitude towards risk and uncertainty into context.

"The real mountaineer does not like taking risks. It is stupid to scorn death. we are too fond of life to gamble it away. In my profession of guide, I have to accept some risks everyday. I know them too well, I fear them too much to like them or seek them out. No, make sure you do the hardest and most daring things as safely as possible. The climber likes difficult pitches, even those which tax him, to the utmost, but in such cases, it is as pleasant for him to feel safe, in his heart of hearts, as it is unpleasant to go beyond his resources, to run a risk or incur some climbing hazard.....and yet the climber has sometimes to accept certain risks: the sudden onset of bad weather, storms, thunder, a hold which gives way although well tested, a melting snow bridge which must be

negotiated, a pitch which the climber suddenly finds is beyond him but from which he cannot withdraw, once he is committed.

In all these cases, a thrill runs through him, but much too unpleasant a thrill for him to seek it out or enjoy it. We are not 'dicers with death.' "

Csikszentmihalyi (1974) found that climbers likened the experience "to exploring a strange place".

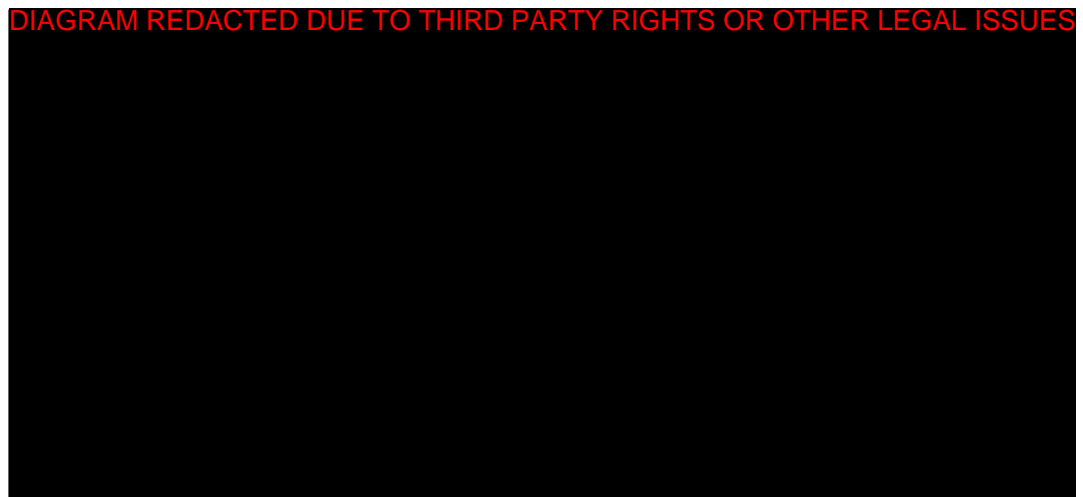
Jed Williamson and Michael Mobley (1984) say one should not confuse the terms 'peril' and 'hazard'. Peril is the source of the loss as distinct from the uncertainty about a loss. Their examples are a fire, a broken rappel rig, and a liability judgment. These incidents give rise to risk, but are not risks themselves, whereas a hazard is the condition which increases the likelihood of loss. Williamson and Mobley (1984) subdivide hazard into physical hazards - a worn rope for example and human hazards, which could include carelessness, accident proneness, poor leadership. The climber should be aware of these distinctions.

## **2.2 ACCEPTABLE RISK.**

To determine the level of uncertainty or risk that a given activity involves the climber must evaluate his subjective perceptions of that situation. Helm (1984) in his article Factors Affecting Evaluations of Risks and Hazards in Mountaineering, says for instance that, "uncertainty in a mountaineering situation also promotes perceived risk and stress in the climber." Emerson (1966) found that climbers maintained motivation by actively seeking uncertainty. Helm (citing Parker and Harding, 1980) says that "calculated or perceived risk is affected by several variables: the frequency and magnitude of the hazard, the individual's experience with the hazard and the individual's personality. The validity of the climber's assessment of risk is dependent on perceptions of both the hazards and personal capabilities. If this is not sound then the evaluation becomes invalid and real risk then may be operative. Helm (1984) also points out that this evaluation can be influenced by psychological and sociological phenomena. In climbing, research needs to find out what is the amount of risk a climber feels is acceptable - "sphere of acceptable risk" - compared

to the rewards or gains offered. This would be in keeping with exchange theory (Blau, 1964; Homans, 1961, and Thibaut and Kelly, 1959) which argues that human interaction is a social exchange. Their Social Exchange Model views social behaviour in a manner analogous to an economic exchange. Thus as in an economic transaction one can incur profit and loss, in a social encounter one can receive rewards and costs. Here the individual incurs psychological costs during interaction, although both participants try to maximise their personal gains or rewards and minimize personal losses.

**Profit = Total Rewards minus Total Costs.**



**Figure 2.1. Social Exchange Model for Human Interaction: Thibaut and Kelly.**

Homans saw this interaction more in terms of reinforcement theory (after Skinner) where "human behaviour is motivated by the desire to obtain or increase satisfaction and avoid or reduce dissatisfaction". In a more recent comment, Carron (1980) says "the appeal to the social exchange theory lies in its general applicability to a wide cross section of social situations", but points out it has an important qualifier, "the model can only be utilized post-dictively - it has no predictive power." The applicability of this model then would certainly be a limitation to the present study, although it would link the need to balance risk taking with

the incentive for interaction through internal factors and situational requirements (external factors). However for Helm (1984), " The sphere of acceptable risk for each person is based upon all of the climber's protective measures and all the possible mountain hazards. Climbers who are capable, confident and who have a healthy self-image will adjust the sphere so that a degree of uncertainty is maintained and the goal provides sufficient challenge and reward to require the highest level of the climber's competence." White's (1978) view of risk acceptance is similar: " the degree of risk is largely dependent on how far participants decide to go beyond their skill competency." Helm and White's assessment here comes close to the present researcher's own risk taking model of risk acceptance, (Fig. 2.2.in the summary of this chapter) based on the latitude of acceptance principle (Sherif and Hovland, 1961, and Triandis, 1971), but here referring to latitude of competence. Clearly then the potential danger for the climber in accepting a risk, as pointed out earlier, lies in his ability to assess his and the group's competence. For instance, real risk and perceived risk are dependent on the climber's competence. However, as Helm (1981) in an earlier study found, climbers thought they could 'control' genuine mountain hazards through their own competence and concentration, and Williamson (1981) listed natural or objective hazards as contributory causes to almost half of all mountain accidents. Thus the climber's miscalculation of the competence: danger ratio can put him into a genuinely dangerous situation. Helm (1984) points out three such misconceptions. 1. Climbers use a broad spectrum of subjective perceptions in order to accept mountain hazards. Intellectualizing about a hazard for instance can decrease one's perception of the hazard but do nothing actually to reduce the hazard. (Williamson, 1981). 2. Protective measures give the climber increased confidence in tackling a hazard. (Fitzharris and Simpson - Housley, 1979). 3. There exists a kind of " hazard folklore" based on informal communications among climbers, not on hard evidence. (Helm, 1981). Thus the climber must be psychologically aware of the effects on his perceptions of risk.

Already referred to and shown to be of value in researching mountaineering is the risky shift phenomenon which Helm (1984) sees as

"a sociological phenomenon affecting perceptions of risk and hazard in mountaineering." He reminds us that, "when a group verbalizes its decision concerning a risky situation, the group's decision tends to be riskier than the individuals would have recommended privately."

Cartwright's (1971) concern, like the author's as discussed earlier, is whether this phenomenon may affect the safety of the group. Williamson (1981) and Meyer (1979), reviewed adventure and mountain accidents, and found three main causes which indicated that most accidents were attributable to accepting increased levels of risk. Helm (1984) points out that many of these accidents could have been avoided, if guides and instructors had been aware of the psychological and sociological phenomena that affect the levels of acceptable risk. Thus the key to reducing the effect these phenomena have on the climber's calculation of risk and hazard, says Helm, is to stress to outdoor leaders that they need to be "aware that these phenomena exist and affect one's evaluation of both risk and hazard."

Although 'theory' can be daunting to the young climber, where actions speak louder than words, one would like to extend this awareness, to the young climbers themselves. This study seeks to ascertain if young climbers do assimilate evaluative skills and use them in the course of their climb.

### **2.3 RISK AND UNCERTAINTY.**

Although uncertainty might be at the heart of any mountain climb, and as mountaineering is accepted as a risk taking activity, this does not of itself mean that the situation is always risky. For instance, a person can be uncertain about how long to boil an egg but this uncertainty can scarcely be construed as risky. Certainly non-risk situations can be termed uncertain. Perhaps a look at the dimensions of risk would help us to understand the issues. Williamson and Mobley (1984) for instance include concepts of chance, probability as well as uncertainty in their definition of risk. As noted earlier, gamblers, educators, housewives, politicians, insurance brokers and so on have entirely different conceptions of the term risk. Risk, then, can be

perceived by the person but not be real, or the risk can be real but not perceived as such by the person. Any endeavour can contain both the perceived risk of the person, subjectively based, and the real risk, objectively based. For example: if a person walks unknowingly on to a bridge that is about to be dynamited, the perceived risk is low and the objective risks are high. If a person walks onto the bridge in the mistaken belief that it is about to be blown up, the opposite is true (Williamson and Mobley, 1984)

Thus, as Cohen and Christensen (1970) point out, personal uncertainty as to the possible outcome of a particular event or series of events must not be confused with an appropriate measure of statistical uncertainty related to the same outcomes. Hazard is a statistical measure over a series of events or outcomes, while perceived risk, as just pointed out, is a measure of a subjective process expecting success or failure.

Perhaps a close examination of risk and hazards is necessary, for instance natural hazards like land falls, avalanches. Man has little power over these occurrences which he can only take steps to minimise. The failure of natural or human enterprises whether it is in the collapsing of bridges through faulty equipment or pollution of the atmosphere, are hazards where one can only mitigate disaster. Cohen and Christensen (1970) put forward two factors that need consideration in relation to hazards. Information is needed on:

- (i) a realistic appraisal of the statistical frequency of a disaster;
- (ii) a realistic appreciation of the magnitude of the disaster if it were to materialize.

These two factors interact and must be investigated together, although the relationship between risk and hazard becomes clearer when one considers who is responsible and what actions have been taken for reducing the impact of man made or natural hazards.

## **2.4 RISK AND TASK DIFFICULTY.**

There is evidence that risk is related in a special way to the subjective difficulty of a task where if the performer thinks the task is too easy or too difficult then the outcome becomes predictable. It seems

that the zone of realistic judgment is about 30% to 50%. (Emerson, 1966). When the likelihood of success is rated higher (task easier) underestimation of expected success takes place, while over estimation occurs when the likelihood of success is perceived as lower. Cohen and Hansel (1955) found this to be the case with subjects when estimating the height at which they were willing to jump over a beam. An understanding of this 'zone of realistic judgment' could be important in climbing, because the two main occasions when climbers are at risk and consequently need to readjust their situation are, (i) when they underestimate the difficulty of the terrain and, (ii) when they overestimate their skill and ability.

Is risk acceptance consistent? Cohen and Christensen (1970) reported an experiment where a driver took six whiskies and remained fairly stable in the risk that he was prepared to take, although internal consistency was disrupted in his behaviour, because the influence of the alcohol was such as to increase the hazard at any given degree of risk. Dearnaley (1958) pointed out a situation where risk-taking might be less stable; for instance, when an involuntary delay is imposed on the decision maker. Here the person might become impatient with the delay and be willing to take a greater chance.

What does risk depend on? Cohen and Christensen (1970) put forward two hypotheses: 1. 'Maximum risk taking is constant - that is to say proportion of expected success corresponding to the most difficult level of task that person is prepared to take is invariant ( within limits).' 2. 'Risk-taking is a group factor - which means that an individual's maximum risk-taking level is constant in comparable situations, but may vary considerably from one class of situation to another.' They further point out that the evidence so far does not lead one to come down in favour of one hypothesis or the other, but perhaps pending further investigation experience would lead one to favour the second.

Cohen and Christensen's (1970) second hypothesis is particularly relevant when we realise that while participants in an adventure programme want a sense of excitement and danger they have no intention of being injured. That is, most participants want the appearance but not



the essence of risk. The heart of a risk management programme is to provide the opportunity for risk-taking without the serious dangers. This would be particularly appropriate in school based adventure. Senters (1971) describes the search for risk in his statement by saying 'people require a certain level of uncertainty (risk) with which to test their own talents and responses where people have a choice of activity as in recreation and seek subsequent opportunities for challenge and will be motivated to maintain uncertainty when present and seek it when absent'. White (1959) Berlyne (1960), Ellis (1973) and Csikszentmihalyi (1975) all support the concept of climbers and adventurers seeking uncertainty. Ewart (1984) criticises adventure-based activities programmes offering risk by saying not enough emphasis has been placed on developing judgment, observation techniques and intuition. One would feel here it was crucial to be allowed, within the risk management programme, to make one's own decisions, in relation to risk and hazard, because through it the climber would learn to make correct decisions. What young climbers need to know is how to discern the hazard and how to assess the risk, both of which are inherent in correct decision-making.

It is therefore difficult to present risk as an isolated factor because in real terms a number of themes are interdependent: information, probability, nature of risk, decision and risk. Risk-taking then can be seen as a sub-set of decision making, (Shaw 1971; Cohen and Christensen, 1970; Ewart, 1984) and as such is gambling in the widest sense, although the stake and the pay off could be extended to include physical safety, and personal reputation.

## **2.5 THE PRACTICAL APPRAISAL OF RISK-TAKING.**

In a sense, how well a group or an individual copes on a mountain expedition, can be evaluated as a performance, just like a game of hockey or basketball. The confrontation between the team and the adversary are the integral part of the challenge. In this case the adversary is not another team but an indirect opponent, active or passive depending on the terrain encountered or the weather conditions experienced. To some

extent one could say, that the indirect competition is the ability and wits/skills of the team against the changing patterns of weather conditions and the variation of types of terrain. The choice is left to the team, which adversary they wish to take on, perhaps the tame or benign challenge of a slightly undulating slope with clear obvious path ways wending to the top, or a route that offers a rougher ascent with rugged terrain, unclear paths and perhaps exposed ridges. Each route has for the participant a varying uncertainty depending on their ability and experience. As already argued, it is this uncertainty of outcome and the level of prediction of how the individual/group will cope or accomplish a task, that lies at the heart of the evaluation of risk (Helm 1984). The uncertainty for the mountaineer resides not only in what lies ahead, what changes of weather can occur, but also in how the individual and the group will react both physically and mentally to the stresses experienced. Perhaps the surprising thing is that people are motivated by a step into the unknown, where they actively seek stressful situations and enjoy undertaking challenging activity. For Bonington (1982), for instance "adventure involves a journey or a sustained endeavour, in which there are the elements of risk and of the unknown, which have to be overcome by the individual. Furthermore, an adventure is something that an individual chooses to do and where the risk involved is self-imposed and threatens no-one but himself."

As pointed out earlier, the nature of risk really centres on the level of uncertainty that exists in the perception of a task by an individual, taking into account his ability, competence, skill, know-how, confidence and so on. In climbing /mountaineering the team also has a collective force to draw on. Pooled knowledge, experience and ability could enhance the group's success rate by having more information available for analysis. On the other hand a group is a collection of individual personalities with a number of varying reasons for participation, which could hinder assessment rather than promote it. Certainly in evaluating a situation and its level of risk, group interaction will be complex and not easy to study Gill (1984).

The mountaineer during the planning stage accepts the degree of uncertainty and the level of risk, that he feels will make for an interesting

and challenging adventure. The ground rules for the contest are unwritten yet central to the individual's or group goals. If a very difficult route is undertaken by an inexperienced group, too much risk could render the contest a non-starter. A balance has to be struck between experience and difficulty (White 1978) Once the expedition has got under way evaluation is an ongoing thing. In fact, a profile of decisions with varying intensity develops as the climb progresses.

In the early stages providing things are running to plan, there is little fuss, as characterised by a minimum of discussion, but as the major objective is encountered an increase in tension and more serious enquiry occurs. If the weather conditions remain stable, the competition and the prediction of how well the climb will go should prove satisfying and straightforward. Any problem then will be caused by an over estimation of the group's ability and competence and/or an under estimation of the difficulty of the terrain. If weather conditions worsen in relation to rain, excessive heat, strong winds and so on, then the level of difficulty is automatically increased. This means that a reassessment of the situation is necessary. Can the group extend themselves sufficiently to cope with the increased challenge? Would they be pushing themselves to the limits? Is the environmental stress too uncertain for them? These and many more are the questions which would need to be asked in order to come to a sound decision. A decision now, will revolve around the ability of the group to assess accurately their situation and predict the consequences of their actions. They will need to evaluate the difficulty and assess the level of risk. Each individual will also evaluate the level of risk he is willing to accept. Discussion within the group will resolve the level of risk acceptable to the whole group, obviously taking into account the weaker members and the shared incentives.

Preceding any crisis there will be assessments of performance by individuals and by the group as they interact. The evaluation of that performance will need to take into account a number of important factors:-

1. The place (mountain or route) chosen with possible alternatives if problems arise.
2. The individual's body (physical), thoughts and feelings (psychological)
3. The persons they are with and their general disposition.
4. The group/team of which they are a part with its unity, pride, togetherness
5. The purpose and objectives of the expedition and how they intend to attain them.
6. The incentives and drives of the individuals and of the group as a whole.

It is important to note that these factors interact, thus making accurate evaluation more difficult. Sound judgment will be necessary from both individuals and the group if they are to cope with the changing situations that confront them. The group will need to reappraise the situation and assess the level of risk as they perceive it, from every angle. While risk evaluation is only one important factor in any decision making process, to minimise risk the likelihood of similar or greater hazards and difficulties occurring needs to be predicted (Ewart 1978). An estimate of the condition of the party both physically and mentally will be necessary, along with just how high a premium has been placed by the individuals or the group on achieving the set goals. Incentives and reasons for participating are important motivating factors and can override logical arguments (Rutland 1982). Although all this might seem a difficult dilemma to resolve, decisions really depend on the ability of the group to make common sense judgments about the predicted outcome. The more experienced the individuals are within the group, the more able are they to predict problems and to suggest alternative strategies, when unexpected uncertainties such as poor visibility, landfalls, avalanches or heavy snow falls occur. They also know the importance of maintaining inter group pride and satisfaction (Zander, 1978). However, they are not necessarily less susceptible to the habit-based processing which can lead to poor decisions (Janis and Mann, 1984.)

## **2.6 THE ROMANCE OF RISK**

In high-risk situations there is always present a high level of anxiety evoked by the activity itself. Adventurers seem to accept this as 'par for the course' and do, in many cases, actively seek this state of tension (Miles, 1978). The high level of danger, the degree of extreme conditions tolerated and the ability of the participant to keep control, are important features of the game. This maintenance of control over oneself or craft or one's destiny seems to be, as Maslow (1968) says, a higher-order level of achievement evoking great pleasure and satisfaction. Where the control seems to be lost, yet is regained, or where the situation seems to be absolutely out of hand, yet one wins through, these occasions represent some of the peak experiences enjoyed by mountaineers and rock climbers (Ravizza, 1984). It is the putting of oneself into the 'jaws of death'; to run the gauntlet; to kiss the enemy in the eye and to pull out successfully, that makes the whole venture worthwhile.

An interesting feature and one worthy of emphasis, is that no matter what stage of experience a person has reached, the quest for adventure can be equally inspiring and breathtaking. For the young child going out into the garden for the first time (Woodhouse, 1988), venturing into the unknown as experienced by Chay Blyth on his Ocean crossings; Bonington climbing the Eiger; or even Hilary and Tensing's first ascent of Everest; the thrill is similar. The only real difference may be that the child has little control over its natural curiosity and willingness to explore, while the seasoned explorer actively seeks to challenge the unknown and does so with a calculated knowledge of the risks. This does not mean that the expert seeks adventure without curiosity, or seeks to discover the unknown without an eagerness to explore. It only highlights the importance of control in the game.' In the child's or novice's case the ability to evaluate the world around becomes more and more important for successful survival. It is by meeting the various challenges encountered in life, that man learns about himself, others and the environment. For every person on a quest for adventure there will be a level of curiosity, a degree of uncertainty, an element of risk all of

which, must be taken into account, if the challenge is to be worthwhile and a high degree of success achieved.

This research investigates the reality of that challenge and the processes by which it might be accomplished.

## **2.7. Risk-taking model.**

The main factors are encapsulated in the risk-taking model for risk acceptance in Figure 2.2. (Martin and Priest (1986) also put forward various models to explain the relationship of competence and risk.)

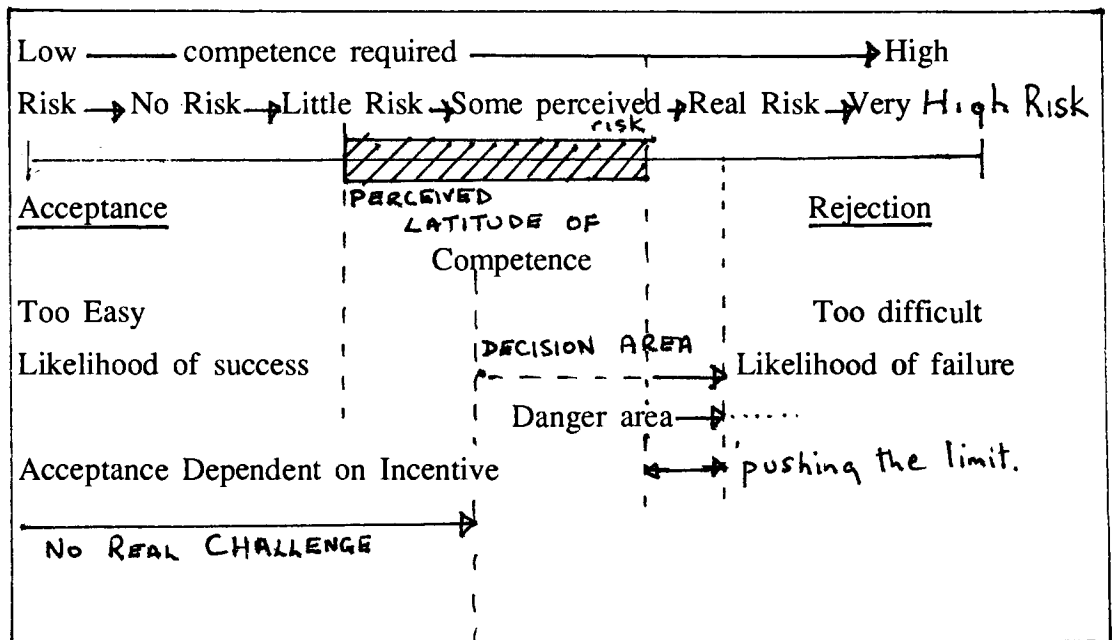
Before a person attempts a task a number of factors need to be taken into consideration each having its own continuum:

1. The competence level required to complete a task successfully.
2. The level of risk, ranging from no risk to extreme risk or impossibility.
3. The point at which the risk will either be accepted or rejected with a sliding scale of perceived competence varying the point in relation to the other factors.
4. The level of perceived challenge or difficulty from too easy to too difficult.

These factors may be instantaneously assessed or pondered over with much deliberation depending on the perceived level of risk contained in the task. As Helm (1984) and White (1978) say, the degree of risk is largely dependent on how far participants decide to go beyond their skill competency. Thus the heart of risk acceptance lies at the individual's perceived latitude of competence. If a particular task requires a certain competence which falls well within the individual's range then no or little risk is incurred. Acceptance of the task will be dependent on the individual's incentive. If the task is too easy with a likelihood of 100% certainty of success then the individual may reject it not on risk or danger but on motivational grounds. Conversely a task would be rejected if it was thought impossible or of extreme difficulty. The question is

when does a particular task become risky to the individual participant? Unfortunately there is no exact point of measurement as this will vary with each individual and with each situation but as the competence requirements for a particular task increase and near the limit of the individual's competence then some perceived risk occurs which could become real risk if the performer goes beyond his limit. Further, the 'limit' is also subject to change from occasion to occasion through confidence or fatigue. The decision area for the individual on whether to accept the risk or not is when the challenge becomes positive, that is according to Emerson (1966) when the individual's perceived latitude of competence is around the 30% to 50% or intermediate level. Of course, the major decision area where the consequences of failure could mean death lies at or beyond the limits of the individual's competence. This is the limit that no young climber should be allowed to reach.

**Figure 2.2 Risk Taking Model for Risk Acceptance - J.A.Musson.**



## **2.8. REVIEW OF LITERATURE ON RISK-TAKING IN SPORT.**

Having examined the conceptual idea of risk it would seem appropriate to review some selected literature relevant to sport and physical activity where risk-taking can be viewed in a broader contextual picture than the specific activity of mountaineering.

Webster (1964) and Clark (1969) see risk in sport in terms of risk of injury and point out that sport and recreation are areas where little is known about the cause and prevention of injury. A contributing factor to the lack of research on risk in sport says Hayes (1974) is the feeling that injury in sport is no more than an occupational hazard. Hayes (1974) feels that many of the risks taken are unnecessary and could be reduced by a scientific approach where the collection of data is subjected to statistical analysis, and where inferences can enlighten our understanding of risk and related factors in sport. The responsibility for prevention rests with all disciplines which profess to study man in movement and recreation.

The problem lies with differentiation of what is reasonable and what is unreasonable risk. Because of the variation of behaviour, considered acceptable in sport and the varied environments in which it takes place "one can readily appreciate the difficulty in attempting to quantify risk taking and its many variables", (Hayes 1974). One approach taken by Clarke (1966) defined a calculated risk as " an assessment of the hazards in the sport being offered relative to the sports purported benefits", universal benefits would not be easy to quantify because of the varied nature of 'man.' However, Meier (1978) attempts to outline the potential benefits for participation in risk recreation: " Such values are often expressed in terms of goals or desired outcomes, For example, development of a sound self-concept, including self reliance and self confidence, might be a reasonable goal or outcome. Other examples of desirable goals could include development of environmental awareness, aesthetic appreciation, cooperation, physical fitness, ability to deal with stress, tenacity, and 'cosmic humility.'"



Klein (1973) hypothesized that "risk-taking in sport has changed and is complementary to changes in society." He develops his argument by saying the split-second decision making of the frontiersman have given way to the long range planning of a modern bureaucracy. Perhaps Klein has a valid point because more people have more time for recreation and leisure pursuits, but this does not mean that they have no decisions to make. Certainly, as Hayes (1974) affirms, "participation in sport and recreation is increasing rapidly, therefore people will find themselves naturally in situations where risk-taking decisions are needed to be made".

Persons responsible for safety in any activity, whether it is in sport or high-or-low risk physical activity, need to be cognisant of the reasons why people participate in that activity. Gaudiano (1980) looked at high risk activities in physical education while Marcum (1981) researched risk acceptance among physical educators. Niemand (1979) found that some people had preferences for physical and vertigo risk activities. Carlson and Klein (1971) for instance in their investigation of participants in such high risk activities as sky-diving and snow-mobiling concluded that "these individuals have low status, routine occupations and relatively low levels of education and income with such occupations...tend to be uncomfortable with abstractions and impatient with long-range planning. Stubbins (1984) found that mountaineers as well as sky-divers were sensation seekers. Thus the relationship between high-risk activities and social characteristics highlight the complexity of the problem. Here these people may be looking for social acceptance, prestige, or just a change of pace in their mundane lives.

Why people participate in potentially dangerous activities is at the heart of the problem. Meier (1984) says minimizing accidents and risks in high adventure outdoor pursuits is possible although as Meier (1978) points out " risk is the essence of living, for really to live is to take risks". Helm (1984) feels "the risks and hazards involved with climbing make it the challenging and rewarding sport it is", while Loy and Donnelly's (1976) research on the relationship between the need for stimulation and risk taking clearly supports the existence of a human need in some individuals to seek out greater stimulus than others.

Klausner (1968) put forward the same observation drawing on Berlyne's (1960) notion that there is an optimal level of arousal that an individual seeks. If insufficient stimulation exists in a person's environment, then the person will be likely to become bored and seek more stimulation. Mitchell (1982) pointed out the benefits of leisure stress while Bunting (1982) advocated managing stress through challenge activities, although Meier (1978) points out, " The reason people participate in certain recreation activities is probably rooted in a combination of physical, psychological and sociological structure and the influences of society and culture as well."

Higbee, (1972) identifies males, Vroom, (1971) young people and Krauss (1970) educational dropouts, as the segment of society most prone to high risk taking. Drasdo (1981) in his article on the nature and reason of risk taking, constructed a likelihood of accident table for the year by age group and found in Great Britain that those most at risk from accidents were young people between the ages of 16 to 25. This comes as no surprise to insurance agents who require this age group to pay the highest premiums.

Perhaps as in the case of the sky divers the motive for participation could be the acceptance of an outrageous challenge or testing oneself against the odds or even simply just the sheer thrill of it. Klausner's (1968) study of parachutists for instance, found three dominant personality characteristics: rationality, egocentrism and repetitiveness. Drasdo (1981) suggests these characteristics also seem to apply to climbers.

If we have such a variety of reasons for participation how can the risk factor in sport be controlled or reduced and sport safety enhanced? Barrell (1980) a legal adviser to the College of Preceptors states clearly to teachers, instructors and administrators " young people must never be allowed to get into positions where the risk is uncontrollable." and Brown (1981) writes "Prepare for the worst, and don't let it happen, ever." Mobley (1984) concludes his safety appraisal by saying "understanding the anatomy of an accident is the first step in conscious (non-luck) prevention.

Safety in sport, and climbing in particular is an important discussion issue and one worthy of research, but not a topic for full scrutiny here; rather our concern is with the process of how risks are accepted and hazards tolerated, the power of incentives and the part it plays in the evaluative process. Certainly safety is a pre-requisite to the activity but as pointed out earlier the dilemma is to find the balance between what is too risky for comfort and too cautious for the participant. However a recent report on outdoor activities through a series of articles on risk and safety tries to heighten safety consciousness for all in an endeavour to answer this dilemma (Mobley and Williamson, 1984). Ewert (1984), for instance, advocates a risk-management approach to ensure safe participation in outdoor activities and the like.

The size of the group and its composition can be detrimental to performance (Steiner, 1972) but in sport and physical activity these structural factors are often dictated by the activity. Some activities have individual participants; others have teams of specific numbers; mountaineering has a small group generally not exceeding 8 persons but normally 4 to 6 in number. Few groups go below this number, although rock climbers often climb in pairs and some even accept perhaps the ultimate challenge by going solo. Messner (1977) says while climbing solo he has "a feeling of solitude and silence." and Jones, Lindsey and Fawcett British rock climbers enjoy 'pushing the limits' (B.B.C. series). However, in normal climbing the importance in terms of performance is whether the group product is as effective as it should be, relative to the resources available - the resources being the talents, skills and abilities of the individuals making up the group (Steiner, 1972).

The question posed earlier with the risky shift research is: Do individuals make different decision from those made when they are members of a group? Wallach and Kogan (1965) assert that subjects who have discussed risk taking behaviour together are willing to take more risks than they were prior to the discussion. Gill (1984) points out that "when team performance is at issue a host of complex, interacting social psychological variables are introduced." Wankel (1984) reviewed the theoretical and practical research associated with social facilitation, that is,

the simple influence of others on the individual's performance. Thus the coming together of a climbing group can influence the individual's responses within that group. He pointed out too that situational factors can also affect performance: "a number of personal factors influence how an individual reacts to a given social situation and accordingly how that situation affects his or her performance" (p 308). Thus Gill (1984 p 316) says that to understand fully the performance of a team and its members "one must consider the psychological factors and processes involved in group interaction." Gill recommends Steiner's (1972) theoretical model, 'albeit a general one', as the conceptual framework for an investigation of the individual- group performance relationship. This model could also be appropriate as a conceptual framework for the main study. Although the theory of achievement motivation is discussed in a later chapter, it is relevant to point out here that risk taking behaviour is an important dimension of the theory. Atkinson and Litwin (1960) found that intermediate levels of risk were preferred. A similar observation was noted by Emerson (1966) in his Everest study. Roberts (1974) noted that "risk taking only took place in the presence of other competing subjects."

Literature related to the use of the natural environment and to outdoor activities in sport participation reveals only a small amount of empirical work and even less has been done using mountaineering as a medium for study. Mountaineering has its own rich source of subjective literature: bibliographies, climbing stories, adventure accounts, magazine articles, books and journals. In recent years the use of the natural environment and in particular activities in wilderness areas has become increasingly popular (Cheesmond, J. and Yates, J., 1979)

## **2.9 SELECTED RESEARCH RELEVANT TO SPORT, OUTDOOR ACTIVITIES AND HIGH RISK ADVENTURE.**

As long ago as 1920 the beneficial effects of outdoor activities on children were noted in a pamphlet on camping. Early studies were mainly based on the value of physical education and outdoor activities on children's character and personality. McAdam (1961) and Arnold (1968)

for instance draws attention to the desirable qualities that may be derived from physical education and the position of the individual within the group situation, - "the activities in physical education call for real decisions in real situations, they are not hypothetical, they are actual." Mortlock (1970) declares "For a young person to be in an adventure, is a most educational moment." Subjective evidence of the effect of outdoor pursuits was obtained by Armistead (1969) who interviewed head teachers, physical education teachers and non physical education teachers involved in outdoor activities. He found that only physical education teachers thought that it was possible to affect such variables as social qualities - cooperation, interdependence, and responsibility in a one week course. Goldsmith (1967) concluded from his study of girls attending a one week outdoor activities course that the girls were stimulated by excitement and danger and presumably had a sense of achievement in overcoming their fear.

Hopkins (1985) reminds us that Outward Bound has been a leader in the field of adventure for 35 years. The Outward Bound Organisation, however, had no doubt of the beneficial effects and the importance of outdoor activities in the social development and character training of young people (Hogan,1968). Fletcher (1970) and Strutt (1973) used Outward Bound students to study changes in personalities through exposure to their courses (four-weeks duration), finding positive results especially in self confidence. Chase (1981) used Outward Bound as an adjunct to therapy; Davis (1976), looked at the effects of O.B. on individuals' propensity for risk taking. James (1980), undertook a historical study, Hopkins (1985) and Marsh (1986) studied the effects of O.B. on self-concepts. Many researchers have used Outward Bound programmes as a medium for their studies on individuals and groups.

Walton (1978) sees Outdoor Activities as a way of compensating for the pressures created by modern society where the individual is "searching for his true self". Passmore (1978) suggests the same, "to develop a better understanding of themselves." However, neither writer substantiates his opinions with empirical evidence, and to some extent this is the picture from much of the work in this area. Similarly Huskins

(1975) from his experience indicates that the psychological change that takes place within the individual can best be described as the " growth of personal awareness." Schreyer et al (1978) associate the notion of self-awareness with that of challenge implying that challenge arises from the "psyche".

Much is made throughout the literature of the notion of an awareness of the self through participation in outdoor activities: Dartington Conference Report 1975; Webster (1978); Mortlock (1970 and 1978); the National Association for Outdoor Education (1978) - individuals evaluating their own resources and those of other members of the group in hazardous environments.

The question of the self-concept is fundamental in the study of personality and learning and is also central to social interaction. It is therefore not surprising to find that outdoor activities are used to help researchers understand the issues that surround it. Although this work can lack the generality of empirical evidence, because it is often subjective in nature based on the experience of practising outdoor pursuitists or in the case of mountaineering, climbers, it could be said that validity is based on sound practical experience.

The empirical work by Clifford and Clifford (1967) assessed the psychological effects of changes in self-awareness of a group of adolescent boys while undergoing survival training on an Outward Bound School summer camp and found that changes did occur in the self concept. - " the experience of being challenged to the limit of one's capacity will result in increased feelings of self-worth and competence". Payne, Drummond and Lunghi (1970) who replicated the above study using school leavers participating in an Arctic Expedition also found changes did occur in the participants. However, they warn that changes may occur in more than one way and the mechanisms of change within individuals experiencing such activities should be examined closely. An interesting finding from this study, highlights reasons why the present study should be conducted when they say "that socio-economic factors and type of school attended are important background variables." These background variables are examined in the present study.

In a special editorial insert in the Journal of Physical Education, April 1978, contemporary authorities share their professional views on high adventure leisure pursuits and risk recreation. The editor of this issue, Joel F. Meier says that little material has been written on the subject, and that "this issue represents the most comprehensive collection of printed material to that date on the subject" Thus a brief synopsis of the articles contained in this issue was thought pertinent to the review of literature. In addition, following these articles on high risk, three relevant empirical studies are outlined to complete the selected review.

## **2.10 Review Of Professional Views On High Adventure Leisure Pursuits And Risk Recreation.**

To begin with Miles, seeks to answer the question as to why do people subject themselves to stress and risk? What possible value do they derive from high-adventure activities? He outlines the values of high-adventure risk recreation pointing out its unique qualities and that specific rewards vary from activity to activity. Because "there is an increasing rise on the popularity of leisure activities containing elements of challenge, risk, thrill, stress and adventure", Joel F Meier (1978) asks: "Is the risk worth taking?" He concludes by saying "The benefits derived in the form of positive values are all worthy and can usually outweigh any risks involved." The writings of Jean-Jacques Rousseau (1712-1778) stimulate Welton (1978) to discuss wilderness survival studies and natural freedom. In Rousseau's famous phrase, "Man is born free, and everywhere he is in chains" (meaning the chains of civilization) and "the only way to counteract the unnaturalness of urban life is to periodically renew oneself in the wilderness." Dickey, H.L. follows a similar theme on Outdoor Adventure Training where he says, survival and outdoor adventure programmes claim to provide opportunities to test oneself and to mature as an individual. Schreyer, R.M. White, R. and McCool, S.F., in their article Common Attributes Uncommonly Exercised, examine key aspects of risk recreation, in terms of the patterns of behaviour that people can be expected to exhibit while participating in

these activities. They consider the kinds of socio-psychological outcomes or pay-offs that are sought and the conditions which may help hinder the attainment of these outcomes. They conclude, "People who engage in risk sports appear to be involved in something which includes a wide range of sensory and cognitive functions. It is a complex arousal system which goes beyond immediate turn-ons. It is a challenge for both scientists and the providers of risk sport opportunities not only to recognise the complexity of their experiences, but to actively ensure that appropriate places and programs for such activities are furnished. Given the rising cultural significance of risk sports, ignoring these responsibilities would be professionally negligent."

A Trip into the Unknown by Webster (1978) outlines how Project Adventure focuses on physical education and the academic curriculums. It tries to provide a series of dynamic experiences through adventure, direct contact with the natural surroundings and cooperation, so that the student can appreciate the different relationships necessary in an understanding of the self and the world surrounding himself. He concludes, "a curriculum which allows for the subtle appreciation of our environment and society is the key to enrichment of student lives."

McAvoy (1978) examines Outdoor Leadership Training pointing out the most critical aspect of risk recreation is the leadership component. Obviously the quality of the leader is important for activities to be conducted safely. Just being enthusiastic and/or highly skilled does not mean that good leadership automatically follows. McAvoy outlines where and how leaders are trained and what qualities are expected.

Peterson (1978) puts forward an argument for handicapped persons to participate in adventure pursuits, including high risk recreation. She feels they have the right to risk, because "risk provides the unique challenge of the unknown, the unpredictable, which stimulates an exciting emotional response and a sense of self confidence and accomplishment." She points out that in general the handicapped have fewer opportunities for such excitement and often their jobs are dull or routine. Three main barriers to involvement exist. The first is that the prevailing attitude of society is to assume that all handicapped people are incompetent. Second



the staff attitudes of parks and recreation centres is a negative one where they ban handicapped people on grounds of safety. The third reason is mainly physical because architects seldom design buildings and recreation areas with the handicapped in mind. Access to and usability of facilities was seldom possible even in picnic areas and rest rooms let alone boat ramps or hiking trails. Thus she concludes, "The right to risk belongs to everyone. the resulting joy and heightened emotional impact know no prejudice."

Legal liability seems to be an increasing concern in sport, leisure activities and adventure programmes today. Frakt (1978) advises adventure programme organisers in his article that "there are sound legal reasons why an adventure programme is less likely than other leisure programmes to result in liability (providing all the safety measures are taken). The reason why this should be the case he says is basically because these activities often take place in wilderness regions or in natural settings. Activities which are considered ultra hazardous may come under stricter liability conditions, although in the past this has centred on the use and distribution of explosives and pesticides etc. rather than adventure programmes. However, Frakt concludes, "although there seems no reason to fear undue or excessive liability, the carelessly or foolishly run programme still runs a high risk." Thus if the prudent measures he suggests in his article are followed the likelihood of unjust liability would be small. Rankin's article entitled 'The legal system as a Proponent of Adventure Programmes' explains why he feels that the legal system would not litigate against unusually adventurous programmes, especially if the precautions suggested by Frakt are followed.

White (1978) in his article Natural Challenge Activities seeks to initiate a much needed dialogue and critical exchange on stress-seeking in the wilderness setting. He suggests a useful step towards understanding the socio-psychological basis for natural challenge any resource base which people attempt to go beyond their previous experience level in risk and skill' lifestyles would be to list some of the main constraints and commitments required by participants. The conceptual model takes the basic components of participation in an activity and fosters personal

growth by stretching the participant's technical skill beyond their experience and skill level. The participant enters the risk situation by graded progression, similar to grading systems for rating the difficulty of rock climbs or white water. As a novice he begins at the low risk baseline and progresses to higher risk standards as he increases his technical skill. A willingness to accept greater risk levels is linked to the individual's competency. Thus, as White says, "the degree of risk is largely dependent on how far the participant decides to go beyond his skill competency. Interaction with the landscape becomes the catalyst for personal growth and the potential foundation for leisure lifestyle based around natural challenges." Thus the participant experiences an increase in stress as he progresses along the continuum from activity vehicles to natural challenge activities. The encounter in natural challenge activities usually intensifies as high stress activities are encountered. White feels that the model adapts well to a leisure counselling service, particularly when a wide choice of activities are available.

### **2.11 Three Mountaineering studies.**

The number of empirical works in the group dynamic area which use mountaineering as the medium for research are very few. Three are presented here.

**Study 1.** Emerson's (1966) motivational study of climbers during an expedition to climb Mount Everest in 1963 has been extensively quoted in the literature. This study gives good research evidence concerning the day to day influences on motivation in a natural practical situation. Based on motivational determinants of risk-taking behaviour (Atkinson, 1957) and levels of aspiration of group goal striving (Zander and Meadow, 1965) Emerson, predicted that motivation would be greatest when the task was perceived to be of intermediate difficulty. Roberts (1974) in his study of risk-taking made a similar observation. Results from both studies found this to be the case. In Emerson's study the result indicated that motivation was maximized when Emerson emphasized to his colleagues that chances of making it to the top of the mountain was 50%. Interestingly when Emerson made a discouraging statement colleagues

cheered him up. When he made optimistic comments about reaching the top colleagues responded with caution. Motivation however, was greatest when the outcome of the goal was made to appear uncertain to group members.

**Study 2.** In a longitudinal case study of observations of group dynamics developments in a 4-man expedition team of mountain climbers Mikula and Walter (1969) found that the leadership structure of the team changed over the period of the expedition. What is particularly interesting in this study is that a number of similarities of methodology are found with the present main study. - Both studies use the natural environment, in this case, climbing a mountain as the medium for study, - they administered a questionnaire at various phases of the climb while actually on the expedition and obtained responses from the climbers about their immediate experience as does the present study - during both studies climbers were exposed to hardship, fatigue, uncertainty and risk while on the climb. Thus one would feel that the findings of Mikula and Walter's study could be of particular value to the present research.

The main thrust of their study was the examination of the structure of the group and its development. They examined each climber at various times in the expedition (which lasted for 3 months and was carried out while climbing in the Spitzberg area) by questionnaires asking the climbers to rank each member of the group according to leadership and 5 other criteria. The structure of the group at the onset of the expedition was as follows: A designated leader; a person of high ability and Alpine skills, the most competent in the party; a person who was a good organiser; and one who was the weakest member of the group. The findings were very much in keeping with those that the author has found in his own risk-taking studies. In phase 1 of the climb as the expedition began the designated leader was in control of the group with full agreement by all members. In phase 2, as the climb developed and civilization receded where the climbers were in extreme conditions and some days away from help if an emergency occurred, leadership was taken over by the most competent and the second in order of merit who

was the best organiser. Thus the structure of the group changed at this phase, although the least competent still remained ranked as last in the group. The morale of the group, its cohesion and the cooperativeness of the members was highest at this phase. Little interaction and discussion was a feature of this stage. Phase 3. (when the group were returning, the goal achieved and the pressure off) The structure of the group itself still remained much the same except that the most competent was not so highly rated. More interaction and discussion took place at decision making while cooperation and cohesion were now not so highly rated. The intensity of the climber's responses were very much reduced during this phase.

This study shows that when the conditions were adverse the group were found to be more cooperative and cohesive. To facilitate a positive outcome the group looked to the most competent to lead them through the most difficult conditions. The structure of the group during the development of the climb changed to fit the different situations experienced. The group worked at the pace and competence of the weakest member.

**Study 3.** Rutland's (1982) study of mountain climbers based on the fundamental principles developed by Steiner (1972) and Janis (1971, 81) was used to examine group interaction processes. Rutland aimed, " to provide as complete a description as possible of the decision making group's performance (measured by task completion) given what current research has revealed concerning the quality of decision making performances of groups in risky unstructured environments."

A number of interesting findings came out in this study, although only a few will be examined here. The first and perhaps major finding of interest was that intra-group conflict is conducive to performance. In keeping with this finding a number of sport studies report an increase in performance with intra-group conflict: Lenk's (1969) report on conflict in the German rowing team, McGrath's (1962) research with rifle teams and the Landers and Luschen (1974) study with intramural bowling teams. However, in these three examples the task interdependence is low (Miller

and Hamblin, 1963, and more recently, Goldman, Stockbauer and McAuliffe, 1977) whereas in climbing the task interdependence is high. In high task-interdependent activities, which Landers and Luschen define as interacting, intragroup cooperation enhances both performance and cohesion, (the rate of interaction among team members being the critical difference between coacting, low in interdependency and interacting). Other studies reporting an increase in performance with intra-group conflict are Ball and Carron (1976) with intercollegiate ice hockey teams, Martens and Peterson (1971) with basketball teams, Bird (1977) with volleyball teams and Landers and Crum (1971) with baseball teams. All, except baseball, are interacting sports. Mountaineering is also an interactive sport; the author's concept of mountaineering here differs from Rutland's who sees it as coactive.

A second major finding, in Rutland's study was that cohesion was unrelated to performance, whereas in Lenk's and other studies a negative relationship was found for group cohesion. One begins to wonder what was the source of the conflict in Rutland's groups. Was the conflict within the climbing groups an inner discord caused by competitive tendencies in an individual to perform well in the presence of his peers? Or was it a power struggle between climbers for leadership of the group? Perhaps we would get closer to the discrepancies in findings if we were able to answer these questions.

The third interesting finding was the relationship between task difficulty and performance. Rutland found that performance improved with difficulty. This finding emphasises the importance of the challenge to the climber as an integral part of the adventure activity and of the mountain climb in particular; it therefore comes as no surprise. The level of difficulty the climber is willing to accept is bound up with the acceptance of the risk. Mountaineering is a risky pursuit and as Mitchell (1983) points out, it is one the climber freely enters in taking on the challenge and accepting the risk at face value. The greater the difficulty the closer the climber will be working at the limits of his competency with a consequent increase in risk. However, this increased risk can act as a motivating force, stimulating the climber to achieve even more. The intra-



group conflict, of course, might cause the climber to ensure that no loss of face occurred by accepting a higher level of risk, which in turn could increase the uncertainty of the outcome. Emerson (1966), whom Rutland cites, however, found that climbers were motivated when there was an intermediate level of uncertainty about the outcome of the climb.

The fourth related finding was that climbers were able to overcome substantial increments in difficulty. This seems to be a clear indication of the power of incentives. If the goal is of sufficient importance to the climber, even if that goal seems to be unobtainable, then the climber may be willing to increase the risk level to achieve it. Even the best climbers can be in great danger when working at the limits of their endurance and competence. Pete Boardman and Joe Tasker lost their lives on Everest, for example.

The consequences of risk-taking are probably only acutely felt when one's life is under direct threat, as in times of war, in major explorational adventures or in high risk activities. It is at these times that risk-taking assumes a realistic meaning, because to choose the wrong course of action could result in injury or death. As Schreyer et al (1978) put it, "What we are talking about is not so much a death wish as an enhancement of existence through testing oneself at the edge of life."

# **CHAPTER THREE.**

## **INFLUENCES ON GROUP AND INDIVIDUAL DECISIONS IN MOUNTAIN CLIMBING.**

### **3.1 INTRODUCTION.**

A series of preliminary studies sought to examine the group influence on individual risk taking in naturalistic or quasi-naturalistic settings using 'real' groups making 'real' decisions. Small mountaineering groups under actual and simulated expedition conditions were used to examine influences on the individual's risk - taking levels.

In any decision making process a number of influences can affect risk taking:

1. Group influence.
2. Leader influence.
3. Task influence.
4. Information flow.
5. Existence of norms.
6. Time since group formed.
7. Degree of group cohesion.

The series of studies to be described in this chapter broach these factors in preparation for the main study to follow.

### **3.2 GROUP DECISIONS.**

As Carron and Chelladurai (1978) note, "a group is distinguished from just a collection of individuals by the degree of attraction, commitment, and involvement the individuals have to the collective whole".

One might infer immediately from this observation that the concept of sticking together was all important for a group to function successfully. Gross and Martin (1952) perceived cohesion as the resistance of the group to disruptive forces while Festinger, Schachter, and

Back (1950), defined it as the total field of forces, causing members to remain with the group. More specifically, Carron (1982), advocated, "that in sport teams, cohesion should be viewed as a dynamic process that is reflected in the group's tendency to stick together while pursuing its goal and objectives." This idea that success is very much based upon the coordinated actions and interdependence among team members has interesting practical significance. Certainly, philosophically as mentioned earlier, the idea has been justified by the belief that teamwork and cooperation practised in sport settings will be useful experience for normal life. Many of the decisions that affect our lives are made by groups, e.g. governments, committees, councils, juries, boards of governors, directors. Problems are highlighted and discussed with the group making a decision, which might be met by unanimous, majority or even consensus agreement. The individual within the group, however, has her/his own opinion or solution to the problem but this might not be reflected in the final decision because of the way in which agreement is reached. In a sport context, Roger-Rees (1984 p76) feels that the emphasis on team work and unity rather than the individual may be both a theoretical and practical error.

"Sport is supposed to teach self discipline but if the coach makes all the decisions, the athlete merely becomes disciplined."

As observed in Chapter 1, what one might expect to find is that group decisions would lie close to the average point of view. Evidently a number of factors will affect the final decision made in any group. What fascinated earlier researchers was that the individual was being influenced by the group more than would have seemed likely. Stoner (1961) and Wallach, Kogan and Bem (1962) came up with a surprise finding that group decisions to a wide range of problems were consistently riskier than the average of the individual decisions. Thus, "risky shift" came to provide a motif for research into group decision making for the next fifteen years. After Stoner's non-obvious finding, a decade and half of research ensued. Many explanations were proposed and investigated. Systematic reviews are contained in Dion et al. (1970), Pruitt (1971) and



Myers and Lamm (1976).

Others directed their attention and ingenuity to discovering the extent and derivation of risky shift's operation. Studies typically used hypothetical "choice dilemma" questionnaires. Even from the earliest studies two of the twelve hypothetical choice dilemma questions had elicited cautious shifts, which had then been removed or hidden by the fact that data was averaged over all items. Nordhoy (1962) Rabour, Fowler, Bradford, Hofeller and Shibuya (1966) found cautious shifts in their studies. Moscovici and Zavalloni (1969) and Doise (1969) using opinion items of French University students found that group discussion resulted in a use of extremes of the scale. They labelled this as 'group polarization' while American workers called it a 'choice shift'. Myers and Lamm (1976) summarized the growing literature and provided a clear working definition: "the average post-group response will tend to be more extreme in the same direction as the average of the pre-group responses"

The polarization effect has been demonstrated in a number of laboratory studies (Myers and Lamm, 1976; Pruitt, 1971). Support for this phenomenon was also found by Fraser, Gouge and Billig (1971) who showed that decisions close to neutral point moved further in the direction of the dominant tendency. The generality of the shift was even more clearly demonstrated when shifts were obtained in non-risk related problems. Cartwright (1971) criticised the choice dilemma situation on these grounds. He further questioned the fact that subjects were often only role playing so that the consequences of their decisions were not realised. Thus, whatever decision was taken it was not really life or death; there was no chance of losing that job, or those securities.

The answer to these criticisms in terms of the group decision-making process is to make the problem situation real, as in the studies to be reported here, and for the outcomes of the decisions taken to have direct consequences for the individual or group, again as here. Fraser, Cartwright, Baron, (1974) emphasised the importance of the external validity of group polarization research. Cartwright and Fraser (1971) went further and criticised the use of laboratory groups which are usually short term and only at the beginning of 'norm' formation. In most real

decision taking groups, like committees, or boards of governors, each member is known; their general views, depth of knowledge, and degree of expertise and status are also known. These are all factors that influence the individual in coming to any decision. Fraser points out that in the experimental literature, even where real-life studies have been cited, no clear-cut conclusions can be drawn.

Clement and Sullivan (1970) and Cohen and Ruis (1974) found no risky shifts, only a shift towards conservatism. Yinon, Shoham and Lewis (1974) in their study compared the decisions of students in a real-life situation with those who were role-playing. They found that the real-life decisions were cautious while the role playing students adopted a more risky position. No group shifts in any direction were found by Semin and Glendon (1973) in their real-life study of business firms evaluation committees. In a real-life education situation, Nagel and O'Driscoll (1978) demonstrated a group-induced shift towards conservatism. One study that did find polarization, Walker and Main (1973), compared decisions made by single judges with those made by trios of judges and found that the more extreme judgements were given by the trios.

In reviewing the research findings one feels that the group decision-making process and the group polarization phenomena in particular, are much more complex than at first proposed. It is with this thought in mind that a number of both simulated and naturalistic investigations were undertaken. In perspective, these investigations can now be seen as preliminary to the main study eventually undertaken and more about gaining experience and theoretical understanding than yielding substantial findings that might be carried forward. Accordingly, they are reported here in brief form.

### **3.3 STUDY I: A SIMULATION STUDY FOR DECISION MAKING IN EXPERIENCED CLIMBERS:**

This study sought to simulate and investigate the group influence on an individual's risk taking in a real mountain expedition. In particular it examined the influence of pre - and post - decision group discussion on

risk taking in experienced groups. Subjects were twenty-four male and female "experienced" undergraduates, i.e., who had previously attended a one-week residential mountaineering course in North Wales. All subjects were known to each other, being third-year students on a small Movement Studies Course.

Subjects were seated in a large lecture room, where they were shown a slide presentation of graded climbs on the highest mountain in North Wales. The subjects were randomly assigned to four groups of six. Discussion and consensus decisions were required for three separate stages or occasions.

1. On the preparation phase for ascent.
2. On what course of action to take for "an incident en route" (An information sheet giving route condition and state of the party aided their choice.)
3. On which route to descend the mountain.

Information and questionnaires were standardized for all groups.

#### **1. Initial Individual Decision.**

Each subject was given a route sheet, as appropriate, which described five possible routes up/down the mountain. The climber was requested, on a ten-point scale, to give strength of commitment for that route.

#### **2. Group Discussion and Decision.**

Without having been advised beforehand, subjects were then withdrawn into small groups where they were given new decision sheets and repeated the exercise on a group consensus basis.

#### **3. Revised Individual Decision.**

Each subject now returned to his or her seat and was requested to reconsider the previous individual decision on a new decision sheet.

#### **4. Self Estimate of Group Influence.**

Finally each subject completed a sociometric questionnaire ranking perceived degree of influence of each member of the group, including self, on the group decision. From these data, any shift could be estimated on ten-point scales for choice of Ascending and Descending routes as well as for the injury incident on the mountain.

## **FINDINGS.**

For all three decisions, group discussion exercised a significant polarization influence on the initial individual decision in the direction of increased riskiness or cautiousness. Thus the general finding in the literature was sustained in the special context of mountain climbing groups, albeit only in a simulation exercise.

There was no differences between the group agreed decision and subsequent revised individual decisions, so that being released from group pressures did not entail a return to the prior individual risk level. This is also in keeping with the view of most of the risky shift literature.

### **3.4 STUDY II: A SIMULATION STUDY FOR DECISION MAKING IN EXPERIENCED CLIMBERS: INEXPERIENCED SUBJECTS.**

As subjects in the first simulation experiment were experienced third-year students, a second simulation experiment was undertaken to examine how inexperienced subjects of mountaineering might respond to group influences on their decision making process.

Subjects consisted of sixty-eight movement studies undergraduates, attending a Year 1. psychology programme. While subjects in Study 1 had three years of specialist study in mountaineering, these had none. All groups were determined randomly through letter codes which subjects obtained as they arrived at the session. Groups had six members: four groups were men, four groups were women and four groups were mixed.

The methodology followed that of Study I very closely, with an illustrated slide presentation of mountain climbers followed by individual and group decisions on ascent, descent and the injury incident.

## **FINDINGS.**

### **1. Initial and Final Individual Decisions.**

For these inexperienced climbers, both men and women, there was no significant shift induced by group discussion for any of the three decisions.

## **2. Initial and Group Decisions.**

In examining whether group decisions themselves were any different from the means of individual members, no significant differences were found in any groups except for the women climbers where a significant difference at the .05 level was found. Thus only the women were influenced by the group when reconsidering their prior individual decisions.

### **COMMENT.**

Although no overall significant differences were found in relation to the polarization of decisions after discussion, significant differences were obtained for women students. It was of particular interest that men's findings behaved similarly to experienced groups and that there were significant differences between men's and women's scores.

## **3.5 STUDY III: A NATURALISTIC STUDY OF DECISION-MAKING: EXPERIENCED AND LESS EXPERIENCED CLIMBERS.**

There are a number of evident differences between real-world decisions and what may be attainable in a simulation study. Level of motivation is one such difference. Again, in situations where the consequences would not be realized, discussion may not be as full or as personally based. Wallach and Kogan (1964), for instance, used subjects who were acting as "advisors," with, therefore, no serious consequences to the subjects themselves. Baron et al. (1974) found differences between subjects who were role playing and real protagonists.

An important distinction between Study III and previous investigations was that subjects were not only making real decisions in a real world context, but were to make choices between courses of action graded for risk. One of the aims of this pilot study was to verify the working methodology and procedures for research on choice shift in naturalistic, real-world contexts. The conditions did not lose any realism

despite the planning and decision being made inside and recorded on paper. It is the convention in mountaineering safety to plan routes and to leave the recorded route with some local authority. Those making decisions in this case followed the normal pattern without question, believing the decisions were just part of the expedition planning.

A second independent variable was also introduced: group composition. One group consisted of experienced mountaineers while the other four randomly assigned groups were less experienced. As definitions of risk include some proviso for expertise or competence, it was thought that a small scale experiment within the main experiment could be a useful pointer to polarization contained in initial individual decisions, in that those more experienced in an activity might be more likely to take a higher initial risky stance than the less experienced.

**IN SUMMARY THE MAIN AIMS OF THIS STUDY WERE:**

- 1) to verify the working methodology and procedure in a naturalistic real world context.
- 2) to verify the occurrence of choice shifts in a naturalistic real world context.
- 3) to examine whether a) more experienced climbers would take riskier initial decisions than those who are less experienced. b) whether more experienced groups would take more risky decisions than less experienced.

## **DISCUSSION OF RESULTS.**

The findings from this study showed, that in face to face real decision making situations, it was possible for risky shifts to occur, even if an initial risky stance was adopted. In the Ascending decision condition a significant difference between the group consensus score and

the pre-discussion individual mean score was demonstrated.

In this real-world study experienced groups took higher-risk decisions than inexperienced groups for both ascending and descending legs of the climb. Perhaps, to some extent, this is not a surprising finding, as an experienced mountaineer will have a reasonable knowledge of the odds for being successful. Normally a realistic target is set slightly above known experience and ability. It is this level that alters from person to person and group to group.

The generality of the phenomenon in that group induced shift may be in either a risky direction or a cautious direction was also clearly demonstrated. What is of importance in relation to Lamm and Myer's work, is that these findings occurred with groups operating in real life situations. If mountaineering groups always made risky decisions of the kind found by Wallach and Kagan (1962 & 1964) and Stoner (1961), then these groups would be facing very real practical difficulties. Mountains and mountain weather can be unpredictable even to the most experienced and if groups that venture into these areas take risky decisions about their progress, routes, willingness to achieve their goal and so on, then serious misadventure could occur.

In this real-life study the shift was to caution rather than to risk. Clement and Sullivan (1970) and Cohen and Ruis (1974) had also found, that in real life settings there was no shift to risk, while Nagel and O'Driscoll (1978) found that where items were significant to the subjects, group discussion generated a conservative shift. If this was to be the pattern of findings from naturalistic studies, then the potential dangers that Wallach and Kagan had uncovered would not be so discomforting.

The dependent variable in this study opened up an interesting area for investigation. The fact that there were significant differences found, between experienced and inexperienced groups in amount of shift leads one to consider the whole definition of risk and what it means to different persons or groups. How the variations of interests, motivations, experience of mixed groups reconcile themselves, is part of the investigation to be taken up in the main study.

### **3.6 STUDY IV: THREE NATURALISTIC FIELD STUDIES OF GROUP INFLUENCES ON INDIVIDUAL DECISION-MAKING**

All studies in this group used the methodology of Study III. The purpose was to gain external validity through carrying out the experiment in a natural setting using groups in real situations making real significant decisions. The setting was the same as Study III - a residential centre in a mountainous region.

All procedures were standardized throughout the experiment by using procedure sheets. Experimenters read from these standardized sheets to maintain uniformity across groups. Tests, questionnaires and risk taking cards were also standardized.

#### **3.6.1 TASK STRUCTURES.**

This investigation was designed to examine whether different task structures influenced the decision-making process. Subjects consisted of eleven undergraduates on a one-week residential outdoor pursuits course and twelve further education students on a one week residential field study course twenty three in all. For purposes of the experiment the subjects were assigned to groups of five or six.

#### **FINDINGS.**

Induced shifts after group discussion were consistent with Study III, with both cautious and risky shifts recorded by different climbers. What was of particular interest in this small-scale study was that significant differences were found between the adventure group and field study group difference scores which suggested that individual decision making is influenced differently by the type of task or exercise being followed.



### **3.6.2 NATURALISTIC STUDIES**

In view of the small numbers used in the naturalistic study (Study III) a follow up study was undertaken to verify findings. The same procedure for the experiment was used and in the same area of Scotland - Glencoe.

Subjects consisted of nineteen men and women undergraduates on a one week residential outdoor pursuits course. Members were randomly assigned to groups three five persons and one of four persons.

#### **FINDINGS.**

Induced shifts after discussion were consistent with Study III, with again both cautious and risky shifts recorded by different climbers. In both the ascending and descending conditions no significant differences were found between the two studies in the level of individual pre-discussion scores. However, in the ascending condition a risky shift was here evident, whereas in Study III the shift had been to cautious.

### **3.6.3 A STUDY OF COHESIVE GROUPS IN A RISK TAKING SITUATION.**

The study examined cohesive groups in a mountain setting in order to ascertain whether cohesion within a group influences the risk taking process. Carron (in Silva, 1984, p.340) notes that "cohesion is a critical aspect of group life" and that it is correlated with a number of important group processes such as communication, conformity, role performance, satisfaction and performance. From his discussion on the importance of cohesion one could draw the following hypothesis: the greater the group cohesiveness the greater the group influence on the individual climber.

Cohesive influence was examined again through a group decision making experiment with pre and post discussion conditions as already described. The independent variable was the composition of the groups. Four cohesive groups were obtained based on data from a sociometric

questionnaire.

Subjects consisted of twenty-three men and women undergraduates while on a one-week residential outdoor pursuits course. Three groups of six students in each group and one of five were assigned on the basis of friendship groups as revealed by an initial sociometric questionnaire. Their results would be compared with results from ordinary groups in Study III

#### **Questionnaire.**

On the return of the groups to the centre each individual was asked to complete another sociometric questionnaire to indicate how cohesive the group had in fact been, and to rank each member, including himself/herself, as to felt degree of influence on the decisions taken that day.

#### **FINDINGS.**

Comparisons were made with the Naturalistic study (Study III) where individuals had been randomly assigned to groups.

Comparisons in both pre-discussion and difference scores were made but unexpectedly yielded no significant differences from randomly formed groups.

Certainly as far as this investigation was concerned cohesive groups performed no differently than those of naturally formed groups. Perhaps when groups come together for a hazardous pursuit the task unites the group so that cohesion becomes an important part of the structure of the group more or less immediately. If this is so then the contrast being made here would of course be reduced.

### **3.7 STUDY V: THE INFLUENCE OF LEADERSHIP STYLE ON GROUP DECISION MAKING.**

As already noted, previous research has amply confirmed the existence of the choice shift, polarization and risky shift phenomena. However, Pruitt (1971) in his review of the risky shift concludes 'with the exception of a small part of the article, very little attention was paid to leadership theory'. Pruitt goes on to say that "this is regrettable in the light of the evidence favouring Burnstein's (1969) leader-confidence version of this theory". Straub (1978) also notes that "one of the most neglected topics in sport psychology is leadership".

On the other hand, Tajfel and Fraser (1978) have urged us to forget the 'leader' concept and to "look instead for behaviour that would count as leadership", that is, "any behaviour which moves a group towards the attainment of its goal". This is because individuals in the group exert their own influences to obtain objectives which may or may not coincide with the group's goal. If there is conflict or disagreement then such an individual may be driven to display leadership behaviour and try to obtain his objectives by moving the opinion of the group towards his own goal. Thus individuals may not lead the group in an overt sense, but may endeavour to influence the group by their own quasi-leadership style. As yet another possibility, Fiedler (1964,1967) in his Contingency Model, has identified two contrasting styles of leadership; those that are task orientated and those that are people orientated, where leadership is seen as a function, either a task-related function or a maintenance of member-satisfaction function. He affirms that individuals adopt one of these functional styles in trying to achieve their goals. Further more most people are consistent in their style.

Fiedler's theory highlights the interesting point that leaders will not be successful or even operative in all situations. Highly task-oriented people are more successful leaders when the group's task is either very clear or very unclear. People-oriented leaders are more effective when

the task is moderately defined.

The present pilot study sought to draw these findings together in the context of team leadership in mountain climbing.

Attempts had been made in earlier parts of this investigation (Study III) to assess the perceived influence of leaders on the group. This was done by asking each member of the group to rank everybody within the group for the degree of influence they had on the group in the decision making process. This shed some light on the influence of the most prominent person within the group factor but did not give the full leadership position.

Thus, this further experiment manipulating leadership style should help clarify the position as to whether the leader or leadership style does influence the group decision making process and in particular the choice shift phenomenon.

One can draw from Fiedler's work a number of hypotheses concerning any possible influence that any individual may have on a group during discussion.

- 1: that the type of leadership style will influence the group shift in risk taking.
- 2: that the composition of the group will influence the level of risk taking.
- 3: that task-orientated leaders apply more pressure on the group to take more riskier decisions than people orientated leaders.
- 4: that people orientated leaders will influence the group to take cautious decisions.

The following secondary hypotheses may also be put forward:-

- a) that task orientated leaders will exhibit higher initial risk taking scores than people orientated leaders.
- b) that people orientated leaders will exhibit more cautious initial scores than task orientated leaders.
- c) that groups composed of task orientated leaders will exhibit higher risky individual minus group difference scores than groups composed of people orientated leaders.

- d) that groups composed of people orientated leaders will exhibit lower cautious difference scores than groups composed of task orientated leaders.
- e) that groups composed of task orientated leaders will show a greater choice shift than groups composed of people orientated leaders.

The leadership style influence was again examined through the basic group decision making experiment as described for the earlier studies. The independent variable now was the "leadership style composition" of the groups. Two groups consisted of highly people-orientated leaders; two groups consisted of highly task-orientated leaders, while the control groups consisted of randomly chosen leaders.

Subjects consisted of thirty-six men and women undergraduates on a one week residential outdoor pursuits course. Six groups of six students in each group were assigned on the basis of scores obtained from Fiedler's "Least Preferred Co-worker"

A questionnaire was administered before the experiment proper in order to determine "person orientated or task orientated leaders".

## **FINDINGS.**

Significant findings from this study verify that leadership style does influence individuals' decision making: in fact, the four stated hypotheses were upheld. Of particular interest is that those groups with mixed leadership styles recorded balanced decisions (neither cautious nor risky), while people-orientated groups favoured cautious decisions and task-orientated groups risky decisions concerning choice of route for the climb. However, no significant differences were found in the initial pre-discussion scores for task- and people-orientated members.

Although these, like all findings of the preliminary studies must be viewed with some caution they do highlight possible advantages that might be gained by considering the "leadership" composition of the group.

### **3.8 STUDY VI: INFORMATIONAL AND NORMATIVE INFLUENCES ON INDIVIDUAL RISK TAKING.**

Deutsch and Gerard (1955) formulated a distinction between normative and informational social influences based on the Sherif and Asch studies. They define normative influence as "influence to conform with the positive expectations of another" where "positive expectations refer to those expectations whose fulfilment by another leads to or reinforces positive rather than negative feelings and whose non-fulfilment leads to the opposite to alienation rather than solidarity". Informational influence was defined as "influence to accept information obtained from another as evidence about reality".

Fraser (1978) points out that the normative influence and informational influence will often interact, but that "the distinction appears to be a useful one". Group pressure and conformity are likely to be influenced by the norms of the group while group interaction through discussion will be influenced by the information. He further goes on to suggest that these concepts of influence could be related to power and leadership. Fraser (1971) further showed how the fine detail of group polarization findings can be attributed to normative or informational influence. Burnstein et al (1973) and Myers et al (1974), although using different procedures, went on to compare the relative importance of both types of influence and concluded that the informational effect was larger than the normative one.

Silverthorne (1971) investigated the group decision-making process in risk taking by manipulating the informational input of the group discussion. His assumption was that the group shift in risk taking is influenced by the informational content of the group discussion. His data were consistent with such a view. Further, he highlighted the importance of the type of information input to the discussion: "discussions that contain an experimentally induced preponderance of risky arguments

produce a shift towards risk while a preponderance of cautious arguments produce a shift to caution".

In this study, informational and normative influence were again examined through a group decision-making experiment with pre- and post-discussion conditions as already described. The independent variable was the type of information given to the groups. Subjects consisted of thirty men and women undergraduates on a one week residential outdoor pursuits course randomly assigned to six groups. Two groups were given extra information on the advantages of more risky decisions during the discussion phase. Two groups were given extra information on the advantages of more cautious arguments while two groups were given no extra information. On the return of the groups to the centre each individual was asked to complete a sociometric questionnaire to determine cohesion/leadership and to rank each member, including him/herself, as to the degree of influence they felt that each person had on the decisions taken that day.

## **FINDINGS.**

No significant differences were found between groups in either of the conditions ascending or descending. They had been through a similar experiment earlier in the week and it is possible that the treatment was nullified by learning about each others' disposition during that experience even though they were in different groups and undertaking climbs in a different area. Perhaps, too they had set their goals and their routes from experience gained in the early part of the course. The feeling of the researcher here is that while the study was useful from a methodological view point the experiment needs to be repeated with a stronger information contrast at the discussion phase, if substantive conclusions are to be reached.

### **3.9 STUDY VII: DECISION MAKING DURING A MOBILE MOUNTAIN EXPEDITION: A CASE STUDY.**

Previous studies have examined groups at the time of normal mountain preparation and in particular at the time of route planning. The investigations although natural and real world were mainly restricted to obtaining just two observations. This investigation sought to observe group decision making and influences through the course of a full expedition. As the expedition was hazardous only one group was studied.

Decisions were again examined through a group decision making experiment with pre-and post-discussion conditions as already described. To facilitate the experiment six possible decision situations were identified. The group was told not to consider these decisions until the occasion arose. All other decisions were spontaneous as the situation and circumstances dictated. The leader with the group was briefed to cast any decisions that were offered into choices for the group and to follow in effect the decision making experiment format. Subjects consisted of three men and three women undergraduates on a three day expedition. All were experienced mountaineers. The goal of the party was to climb at least six peaks over 3000 feet and to climb Ben Nevis. The expedition was in April, when many of the peaks were covered in snow. Avalanche conditions were not forecast but always remained a threat to safety, particularly at that time of the year. The party was well equipped and well prepared. A very experienced leader accompanied the group but encouraged the group to make all their own decisions. Each member of the group carried his/her own individual "decision making" cards. The leader recorded the group consensus score.

### **FINDINGS**

In all ten decisions were made by the group. Two decisions were made as the expedition began; four on the first day and four on the second day. Decision 1 and 10 were the only two decisions showing significant shift in the whole of the climb. Both were cautious decisions.



In fact of the ten decisions made only one was in the risky direction. The group's own comments and that of the leader upheld the view that very few if any decisions were suddenly thrust upon them. As the climb evolved it followed much of their pre-planned schedule. No real decisions were necessary. Any decision that needed to be taken had to some extent been foreseen by the group and the course of action was automatically mulled over both by the individual and the group as they went along. Route decisions were checked by those close to the maps; very little discussion occurred.

What this small study shows, really, is just how difficult it is to get at the decision making process as it happens. Perhaps tape recordings of discussions as they happened could highlight the process more. However, careful consideration needs to be given to devising more varied ways of tapping the thinking of the individual at significant points in a climb to ascertain prevailing influences and development of intentions.

## **CONCLUSIONS OVERALL.**

Several interesting contrasts emerged from this early series of studies. We found that cautious as well as risky shifts operated in a mountaineering context, and established the importance of experience and whether team members were person or task oriented.

One or more of these preliminary findings could have been pursued in a definitive study or studies. In the event, however, the two main benefits from the early studies were conceptual and methodological.

Conceptually it was seen to be desirable to recast the research question in terms not just of risk but also of incentive and situational factors, and to seek linkage among the stages of the climb by using both current status questions and questions relating to predictions about the ensuing stage. From a methodological standpoint, the experiments provided a thorough familiarity with the pre/post- discussion design. They also provided direct experience of the way decision making "happens" in experienced versus inexperienced groups, where the degree of planning and shared understanding are quite different. At the same

time, first-hand experience was obtained of the practical problems entailed in the transition from simulation at base to actual en route data collection. Not least, some two hundred subjects were involved in three studies, and the general making of contacts and orchestration of group assignment and data collection provided again valuable experience for the main study.

Before closing the chapter, it is worth noting that research in the last ten years has still found Group Polarization an interesting area to investigate. The following selection shows some of the topic areas investigated:

Gologar (1977) looked at group polarization in a non-risk taking culture. Mardis (1978) used Kogan and Wallack's C.D.Q. to compare established groups and newly established groups on the shift to risk phenomenon. Lilienthal et al. (1979) looked at group polarization in led and leaderless group discussion. Mayer (1980) put forward an arguments explanation of the Risk Shift. Seeborg et al. (1980) did an exploratory analysis of effect of gender on shift in choices. Wright and Wells (1985) asked " Does group discussion attenuate the disposition bias". Social identification effects in group polarization were examined by Mackie (1986) and Rothwell (1986) looked at group communication in educational games in relation to risk-taking and polarization.

One would feel from these findings that the generality of the phenomenon is clearly established, and the topic area in social psychology research is still alive.

# **CHAPTER FOUR**

## **PSYCHOLOGICAL MOTIVATION AND MOUNTAINEERING.**

### **4.1 INTRODUCTION: MOTIVATION IN SPORT.**

The topic of motivation is vast and has stimulated as much theorising as any other area in psychology. The discussion will therefore be kept to a review of motivation in sport. Motivation as found in sport is no less complex than as found in normal living and because behaviour in a mountaineering setting as much as any other is influenced and affected so much by motivation, some understanding of the phenomenon is obviously a pre-requisite for the main study.

In general, motivation refers to the intensity and direction of behaviour. The direction of behaviour indicates whether an individual approaches or avoids a particular situation; while the intensity of behaviour relates to the degree of effort put forth to accomplish the behaviour. Thus, as Silva (1984 p 171.) points out motivation can affect " the selection, intensity, and persistence of an individual's behaviour, which in sport can obviously have a strong impact on the quality of an athlete's performance."

Motivation seems to be the key to the level of performance an individual may achieve. Singer (1975) emphasises this point with a simple equation:

$$\text{Performance} = \text{Learning} \times \text{Motivation.}$$

Singer implies that without sufficient motivation the athlete will not perform very well, while learning alone would result in purposeless activity. Carron, (1977) agrees "that motivation serves to energise, select and direct performance" but also warns that,"the sources of potential motivation for the athlete are numerous and extremely diverse". He sees

these sources as forming four broad categories: the athlete, the athletic competition, the task and the performance consequences. He stresses that the factors affecting motivation do not operate independently, but rather interact to produce a total level of motivation. Carron does intimate that there is no one answer to the question of what spurs people on.

## **4.2 INCENTIVE AND MOTIVATION**

An outline of the main theoretical areas may in fact help to put the incentives of the athlete or mountaineer into perspective. The theory of achievement motivation as proposed by McClelland and Atkinson in the 1950's and 60's has made a significant contribution to the understanding of motivation. McClelland defined need achievement as the positive or negative effect aroused in situations that involve competition and having a standard where performance can be evaluated as successful or unsuccessful (McClelland, Atkinson, Clark and Lowell, 1953).

In the context of sport and physical activity, which is essentially achievement orientated, one can see how this theory could be applied to either individual athletic performances or to performances by members of a group or team in such sports as soccer, hockey or mountaineering. Atkinson (1964) considered not only the motive to achieve but the motive to avoid failure as well. Both motives are relatively stable and result from the individual's previous experience (success and failure) in achievement situations. However, a second set of variables, which can change according to each situation, are the probability of success (or failure) and incentive value of success (or failure). Thus in the context of climbing the extent to which an individual is motivated towards the goal (perhaps reaching the summit of the mountain) depends upon the incentive value of that goal (the reward associated with it) and the perceived expectation that its attainment is possible. The interrelationship between incentive and expectancy is obvious. The individual when selecting a goal takes into account the incentives by setting a goal that seems realistic and achievable. Often this is set at intermediate difficulty where the likelihood of success is 50% requiring some effort and persistence to be successful but not so demanding that the goal would be unobtainable. However, and

often in the case of low achievers, where they might be trying to avoid failure, very easy or very difficult tasks are chosen. In making such extreme choices the individual avoids being evaluated in the challenging situation, because there is little likelihood of failure in the easy task and everybody fails in the very difficult task. When goals are set too high or too unrealistically, frustration and anxiety may be experienced by the athlete which could in turn result in their dropping out of the sport completely. In fact many sport psychologists see goal setting as a motivational technique (O'Block and Evans, 1984). Botterill (1978) emphasises that goal setting can be a motivational force aiding the athlete's performance such that if goals are set realistically they can increase an athlete's commitment and confidence to achieve. Botterill (1979) thus highlights the importance of setting realistic goals. This means that the athlete or team needs to work together to plan their goals if they are going to be successful. This collaboration can itself provide incentive and can act as a powerful motivating tool enabling the athlete to excel, to share in decision making, and to assume some responsibility for actions.

#### **4.3 SHORT AND LONGER TERM MOTIVATION.**

Raynor (1969) considered the effect of long-term goals on achievement behaviour. He pointed out that in many sport related activities long-term goals were generally set but to maintain interest and commitment from players some feedback of success was necessary in the interim period. Creel (1980) recognised the importance of long range goals and also advocated the use of intermediate short-range goals. He attributed his success to this type of planning. Hogue (1980) stated that one of the great motivators of a new season was to set goals to reach by the end of the season: setting intermediate goals then provides an athlete or team with an objective or bench mark against which to evaluate their progress to the long term goal.

While many of the writers being cited agree that intermediate goal setting is very important to enable the ultimate goal to be achieved, Bell (1981) recommends open-ended goals, which place no limits on

performance. This is because as he notes, if goals are too specific they can inadvertently limit performance. e.g. by not encouraging one to push hard enough. One way round such a dilemma was suggested by Jamieson and Wendelboe (1981) who advocated that an athlete's goals be determined from previous best performances with projected improvement intervals built into the intermediate and terminal goals. Thus as O'Block and Evans (1984 p190) point out:

"Several experts in the field of athletics and sport psychology support the idea of combining the setting of intermediate short-term goals with long-range goals as one method to enhance performance."

It was pointed out earlier in the discussion that motivation to achieve goals was dependent on the incentive values of that goal or rewards received from it. Rewards and punishments have long been used to motivate people. In general one would say that external or extrinsic rewards, e.g. performing for money, would encourage athletes to work harder and to aspire to greater heights. However, sometimes people are motivated to participate in an activity without external rewards. In this case the participant performs for pure fun and enjoyment of the activity itself - he is said then to be intrinsically motivated.

Early researchers viewed intrinsic and extrinsic motivation as additive, although some noted the potential undermining effect of external incentives. Numerous researchers led by Deci (1971) have investigated the relationship between extrinsic rewards and intrinsic motivation and found differing effects. Sometimes rewards were found to undermine intrinsic motivation whereas other times they enhanced motivation. Deci (1975) proposed a theoretical framework, based on cognitive evaluation to explain these differences. He put forward two means by which extrinsic rewards can affect intrinsic rewards, controlling and information. The first process by which intrinsic motivation can be affected is a change in perceived locus of causality from internal to external. If an athlete enjoys participating in an activity for its own sake and is offered a reward for taking part, this could undermine the motive base of the individual. This then could make the individual feel that he is no longer in control of his

situation with the result that he reduces his interest in the activity. Further, the receipt of rewards may cause a change in one's feeling of competence and self-determination. If the individual's feelings of competence and self-determination are heightened, then intrinsic motivation will be increased but, if the converse occurs, then there will be a decrease in intrinsic motivation.

On the other hand if the informational aspect of a reward is more salient than the controlling aspect, then the feelings of competence and the self-determination process will be operative rather than the locus of causality process, which means intrinsic motivation will be enhanced. For instance when a person receives a trophy, an external reward, it also gives positive information about the athlete's level of performance as well, which can increase a person's intrinsic motivation. Situations such as this point to the individualistic nature of motivation because only the person involved in the activity feels whether he is in control or if an external agent is controlling his interest. Certainly, in most sports successful performers or teams, have been rewarded with trophies, and medals, while in modern day sport large money prizes are common too, all of which emphasises the wide use of external incentives. Ryan (1979) looked at athletic scholarships in an attempt to assess the effects of extrinsic rewards in a sport setting. He found that sports scholarships affected the motivation of athletes. In the case of male athletes they displayed less intrinsic motivation presumably seeing the scholarship as a controlling agent whereas women athletes displayed more intrinsic motivation. Ryan explained this difference by pointing out that scholarships for women athletes were new and rare, the scholarships then would serve as information about ability since only outstanding individuals received them. However, Ryan also found that intrinsic motivation could vary not because the athlete viewed his situation as controlling or informational but because the coach/leader emphasised the salience of the informational or controlling aspect of the reward.

#### **4.4 MOTIVATION IN CLIMBING.**

In mountaineering the setting of goals has long been an important part of route planning where the whole team as well as any leader discuss and assess their interests and aspirations well in advance of the actual climb. Often to the mountaineer, the manner of achieving the climb is as important as standing on the summit, and the achievement may not be realized until every member has returned to base safely and in good spirits. This last finding could be of interest to the climbing situation because external rewards are not normally a part of the activity and therefore do not affect the intrinsic motivation of the climber. However, this finding highlights a potential source where intrinsic motivation could be undermined by the attitude of the leader. Certainly unaccompanied groups could feel very much more in control of their actual expedition especially where leadership and decision making were shared within the group; yet even in this case the overall aims of the Duke of Edinburgh's award scheme could act as a controlling aspect which could have the effect of reducing intrinsic motivation. What this and other evidence seems to point to is an important awareness by educationalist and sponsoring bodies, like the British Mountain Climbers' Association and the Mountain Leadership Board, of the motivational influence that they and their experienced leaders exert on potential mountaineers, especially as they are usually in a position to control such rewards. Harris (1980) points out another premise upon which the notion of intrinsic motivation is based, and one which would be of particular interest to mountaineering. It is "that individuals tend to be motivated to reduce uncertainty and to feel capable of dealing effectively with the environment." In relation to this premise Deci (1975) proposes that two general classes of behaviour will be produced. First individuals will seek out situations which provide a reasonable challenge, and second they need to be successful in those challenge situations. "Individuals are motivated to reduce dissonance when they encounter it or when they create it. Many (such as the climber) create dissonance or incongruity just so they can have the challenge of mastery in the situation". Harris (1980 p 130) Emerson (1966) found that uncertainty played an important part in



motivating climbers as discussed in a risk context in Chapter 3.

Perhaps the essential aspects for climbing of current motivational theory are accommodated in Csikszentmihalyi's (1974, 1975) research where fun and enjoyment experienced in a chosen activity are the central motivating forces. Csikszentmihalyi interviewed a number of people from a wide range of activities, including dance, chess, music, basketball, surgery, and rock climbing and found the motives for involvement in their chosen activity was the intrinsic reward they received. When people are totally immersed in their activity they experience a 'kind of personal transcendence' which Csikszentmihalyi calls flow.

"Flow refers to the holistic sensation present when we act with total involvement. It is a kind of feeling after which one nostalgically says: 'that was fun,' or 'that was enjoyable.' It is the state in which action follows upon action according to an internal logic which seems to need no conscious intervention on our part. We experience it as a unified flowing from one moment to the next in which we are in control of our actions, and in which there is little distinction between self and environment; between stimulus and response; or between past, present and future." (Csikszentmihalyi 1974, p 58)

Caillois (1961) included mountaineering in his classification of activities having the potential for intrinsic rewards and flow, while Mitchell (1983) puts forward three elements constituting a theoretical model of enjoyment which shows how the flow experience is achieved:

- 1.- through a freedom of choice.
- 2.- through a selection of the task 'limiting the stimulus field'.
- 3.- through the fusion of task and practical application; a merging of action and awareness.

One can see that all three of these would be relevant to mountain climbing.

Flow, then, is a special condition of intense energy outpouring, of maximum performance and minimum wasted motion. It is particularly applicable to climbing, although flow is not a continual experience because extreme positions cannot be held indefinitely. In flow the climber devotes mind and body to the next move totally absorbed but this heightened awareness in a narrow field of action gives way to reality when the climb is over. Although the conditions of normal living soon reimpose themselves, the experience is never destroyed; it remains etched on the consciousness of the climber giving an awareness of life that few

are privileged to share.

From Csikszentmihalyi's viewpoint children have a natural desire to explore, to discover and to enjoy themselves. They automatically immerse themselves in an activity thereby experiencing the flow concept, but society, as it is, demands results, consequently changing the direction of focus of the experience. Perhaps the lessons are there to be learned; somehow the flow motivational experiences should be harnessed to optimise participation, achievement and enjoyment without, hopefully, the loss of interest.

#### **4.5 MOTIVATION IN YOUNG CLIMBERS.**

Probably most of the climbers today fall into one of the following categories:

1. - Climbers at the forefront of human endeavour.
2. - Serious climbers involved in clubs and climbing groups perhaps in the Alps as well as in Britain.
3. - Leisure groups, personal and local walking groups as well as 'fun' climbers.
4. School children or novice groups.

Our concern for the moment is with the school groups, those learning the skills and gaining the experience.

Young children as well as those of secondary school age need little additional motivation when given the opportunity to explore the natural environment and in particular to go climbing. Certainly from Csikszentmihalyi's perspective children seek out pleasure or 'flow' naturally, they need no convincing of the merits of an adventure, even if it is only spending the night camping in the school grounds. Of course, groups that have gained some experience from such tender beginnings know something of the endeavour, the hard work and the possible adverse weather conditions that more advanced adventurers encounter, but also something of the rewards of the activity- physical, psychological, and aesthetic rather than more tangible benefits. Adolescents, as Coleman (1962) and Wall (1960) point out, are very physically orientated. They enjoy the challenge to their fitness, an opportunity to show their ability,

competence, skill and mastery of a task. All are motivated by success. Perhaps, too, in climbing, there is the search for their personal identity, which as well as bringing some knowledge about themselves, acts as an incentive to embark on an expedition. Sometimes, dare one suggest, young people even enjoy and appreciate the scenery in the mountains, the spectacular views, the flora and fauna and the exhilaration of just being in the open air. Many gain lasting benefits from residential courses in wilderness country even if they never encounter the same challenges or see such scenery again. The young mountaineer could be the next club member, the guardian of the environment, or the potential conservationist. Wherever there is a risk of dangerous activities courses need to be well organised and structured, this is why much of the experience is gained from educational establishments such as schools, scouts, Duke of Edinburgh award scheme groups and so on. This means that the incentives that drive the potential mountaineers and climbers are really presented by the educationalist. This is not something distasteful with young people being indoctrinated into some way of life that is harmful, but an opportunity for boys and girls to take part in educational activities concerned with living, moving and learning out-of-doors.

An extract from the Curriculum 11-16: Supplementary Working Papers by H.M. Inspectorate on Outdoor Education illustrates this emphasis.

"Many young people living in towns are insulated from the demands made by the natural environment. Expeditions on land and water are very practical and stimulating ways of restoring some intimate contact with it. Outdoor education as a source of personal fulfilment, adventure and enjoyment will depend on the motivation confidence and competence of young people to develop their own initiatives and explore for themselves. The value of outdoor education to the pupil lies in his total personal involvement. The learning cannot be fragmented. It is not artificial; the situations are real and decisions matter. Outdoor education offers an integrated approach to learning and to the solution of problems, and includes the satisfaction of success and the disappointment of failure when skill and stamina are deficient and safety alone dictates the decisions to be made."

When the young person then enters outdoor education programmes the interest is positive; all the educationalist needs to do is to foster that interest and present opportunities where meaningful experiences can be obtained. A drive to satisfy the growing interest soon develops from skill learning sessions on low level walks and as individuals integrate with others in more difficult expeditions. By the time the young person arrives at a mountain centre there is no need for motivation, s/he already has the desire for success and a willingness to tackle any problem. Certainly the vast majority of young people who go into wilderness areas or mountainous regions are motivated to enjoy their experience. While the direction of the motives are not here under investigation Alderman (1978) has stated:

"...the focus is on discovering what it is about the sport itself (particularly its nature and demands) that motivates a young athlete to persist in his participation. Incentive motivation simply refers to the incentive value a young athlete attaches to the possible outcomes or experiences he perceives as being available to him in a particular sport. "

#### **4.6 THE INCENTIVES OF SPORT FOR YOUNG PEOPLE.**

Alderman and Wood (1976) modified the work of Birch and Veroff (1966) to provide a sports-specific incentive system consisting of seven major constructs: affiliation, aggression, excellence, independence, power, stress and success.

In their study of incentive motives in 425 young ice hockey players (between ages 11 and 14 years), taken against a background of findings obtained from several thousands of athletes from different sports (ages 11 to 18 years), they found a consistent pattern.

1. The two strongest and most consistent incentive conditions for young athletes are affiliation and excellence.
2. Stress incentives run a consistent third.
3. Aggression and independence incentives consistently lack any strength, even in the individual and physical contact

sports.

4. Children are basically motivated by the same incentives regardless of their age, sport, sex and culture.

Carron (1980) says, " These generalizations do have very direct practical implications since the sport environment should reflect the athlete's incentive motives."

These findings are consistent with current thinking in the general psychological literature viewing behaviour as the result of an interaction between the person and the situation in which that person is operating. Early approaches polarised issues. Endler (1976) put forward the 'person' point of view, while Bandura 1977; Skinner, 1960 and Mischel, 1973 took up with the 'situationalists'. However, a general acceptance of an interactional stance now prevails. Mischel (1976), Endler and Magnusson (1976), present-day interactionists, support their case in two ways, by theoretical postulates concerning the way a person construes a situation and by demonstrating the relatively large size of the Person (P) times Situation (S) variance in selected studies. Although Cartwright (1975) and Golding (1975) throw doubt on the appropriateness of the statistical methods used to estimate this variance, Kane (1980) affirms, " Nevertheless, the interactionist approach is of undoubted significance to sports psychologists." Researchers in recent years, such as Martens (1976), Flood and Endler (1976), have been developing sport specific measures of behaviour an emphasis on which has had beneficial effects on research directions, particularly applied to actual behaviour in situ, a move as it were from the laboratory to the field.

From Alderman and Wood's (1976) work one can clearly identify three major kinds of opportunities that can control the sport environment.

1. - the opportunity to pursue excellence.
2. - the opportunity to belong to and be accepted by a relevant social group (i.e. affiliation).
3. - the opportunity for excitement, action and stress.

In mountaineering, like any other sport, the opportunity to be good at something is possible in the overall participation in the activity as well

as in specific areas e.g. rock climbing. Initially, however, this will not be a major inducement, but as the individual's experience increases then the desire to be really good grows proportionally, as Alderman (1976) found in his studies. He maintains that it is not the act of winning or the status and prestige that is important to the young person, as much as the experience of being highly skilled and thoroughly competent.

One would agree with Alderman's second incentive of affiliation where young people constantly seek assurance of their personal worth through the acceptance from teammates. Being an active member of a climbing group, for instance, gives some justification of their own personal self worth and they strive to maintain membership accordingly. This can be contingent, of course, upon satisfaction of the team's progress and the relationship of members to each other. The situation and the circumstances can cause member readjustment within the established structure. Certainly one would feel that the affiliation motive with its potential for team spirit and pride in the group, has similar motivational force to that of the excellence incentives. This would be very much the case in mountaineering.

The variety, the uncertainty, the physical challenge, as well as the spectacular nature of the mountain environment cannot fail to stimulate the potential climber. The novice, the improver and the expert are pitched into an ever changing scene of unpredictability whenever they venture into wild country. The need for stress and arousal is well catered for by climbing. Bonington (1982) in his book *Quest for Adventure* (p10) recounts the effect of the risk stimulus and the mountain on him.

"Being master of one's destiny, with one's life literally in one's hands, is what gives climbing its fascination..... It also gives a heightened awareness of everything around. The pattern of lichen on rock, a few blades of grass, the dark, still shape of a lake below, the form of the hills and cloud mountains above might be the same view seen by the passenger on a mountain railway, but transported to his viewpoint amongst a crowd, he cannot see what I, the climber can. this is not an elitist ethic, but rather the deeper sensuous involvement that the climber has with the mountains around him, a feeling heightened by the stimulus of risk."

Although the mountain stimulates the climber in a unique way as illustrated by Bonington the situation has a similar motivational effect in sport in general. Alderman (1976) for instance described the situational dimensions of motivation in objective terms as "the real or actual physical and social features of the environment or in subjective terms, which focuses on how the individual perceives the significance of the situation." Martens (1975) uses the same approach in his analysis of competition as "a social process". Although Alderman (1976) points out that there has been little research in the area, there is some indirect information available to help towards an understanding of the phenomenon. He affirms that athletes can be motivated in an actual situation by purely objective stimuli. The physical stimuli of the facilities, the surroundings, the cut of the grass, the stillness of the swimming pool and so on can stimulate the performer as does the social stimulus such as the presence of spectators, peer groups, opponents, officials. The natural requirements of the task itself in varied situations has the potential to arouse athletes, especially with feedback of their performance. Alderman goes on to say, "if you add to this a subjective perception of some of the powerful psychological stimuli existing in the situation one can sense that some situations can heavily influence the motivational level of athletic individuals."

Mischel (1973) takes a similar stance by saying "that individual differences in behaviour are attributable to specific response potentials which are activated in specific situations". Certainly the influence of the situation on the motivation of the athlete is apparent, whether it be on the track, in the stadium or on the rock face, but it is also important to note that athletes are not all motivated for the same reasons, because they differ in what they know, how they perceive themselves, their expectancies and how they attach incentive values to the possible outcomes of the situation. Nevertheless situational factors motivate athletes. Carron (1975) observed that certain sport situations were so powerful in their psychological effect that athletic groups exhibited the same kind of behaviour as other individuals.

Normally when people go out into the mountains whether it is to

climb or to walk they do not go alone. A consideration of the motivational effect of the group on the individual is, therefore, important in an understanding of the influences on a climber's incentives.

Ample research has shown the importance of goals to the individual and to the team, (Bandura 1982; Bandura and Schunk, 1981; Botterill, 1980) as motivating factors which guide and give purpose to behaviour. In addition, previously set short-term goals give the athlete a growing sense of pride, accomplishment and self satisfaction (Bandura 1982; Locke, Cartledge and Knerr, 1970). Because, as Deci (1975) points out, people "have an innate need to feel competent and self determining concerning their environment, goals provide self evaluation standards from which to judge one's capabilities and consequent team performance. However, these capabilities depend on the individual's belief in himself, and his self confidence or self efficacy (defined by Bandura 1977b as the strength of a person's conviction that he or she can successfully execute a behaviour required to produce a certain outcome.) " Efficacy expectations determine how much effort people expend on a task and how long they will persist in the face of adversity or setback." One can see the importance of self confidence/efficacy as a motivating factor in mountaineering, because of the uncertainty of outcome that attends the activity.

#### **4.7 GROUP MOTIVATION.**

Bandura (1982) includes collective efficacy as a motivational influence, which he defines as a "group's confident expectation that it will successfully reach its intended goals". According to Bandura, a commitment on the part of the team is required to share specific purposes so that through teamwork and concerted effort, success can be achieved. Carron (1980) affirms that when sport groups come together they already possess " a sense of unity or collective identity, a sense of shared purpose or objectives, structured patterns of interaction, structured modes of communication, personal and/or task interdependence, and interpersonal attraction". These characteristics of a group do not remain static, they are forces that are part of a dynamic process referred to by Kurt Lewin as



influence group participation and group change. Cartwright's (1968) definition of cohesion seems appropriate to a small group study, "the degree to which the members of a group desire to remain in the group" A person's attraction to a group, according to Cartwright, is determined by (1) his motive base for attraction; (2) the incentive properties of the group; (3) his expectancy that membership will result in beneficial, or detrimental consequences for him, and (4) the quality of outcomes he believes he deserves.

On a more specific nature of the motivating forces among individuals within a group is Zander's (1971, 1978) work, which presents a model revolving around making a sense of pride in the group an important attribute. According to Zander, the desire for group success is a group orientated motive from which members derive pride in performance and satisfaction with the group if it successfully accomplishes a challenging group task. In contrast, the desire to avoid group failure is a group member's disposition to experience shame or dissatisfaction with the group if it fails a challenging task. Bandura (1982) and Zander (1978) say that when group members experience pride they also show feelings of satisfaction and collective efficacy towards the group which will be carried over into future performances. Certainly in climbing groups one can see the motivational importance of Zander's pride-in-performance approach.

In relation to the questionnaire used in the present study, which examines a climber's incentive, six underlying themes were put forward. These were drawn from the relevant theory discussed; the practical experience gained from previous research work; discussion with experts and practitioners in the field as well as a personal 30-year involvement with adventure activities by the author. Incentives, or motivational factors, as identified within this rationale are then shown to be important determinants of climbers' behaviour, so that any investigation of influences on climbers will need to take into account the prominent part these determinants play.

#### **4.8 THE DETERMINANTS OF INCENTIVE.**

In the present research climbers' incentives were taken to be made up of six determinants as follows:

- 1.- goal realization.
- 2.- morale.
- 3.- challenge.
- 4.- satisfaction.
- 5.- self esteem.
- 6.- cooperation.

The importance of setting realistic goals and of goal realization has been evident within the foregoing discussion and review. The research themes of cooperation, challenge and satisfaction are reasonably paralleled in Alderman and Wood's (1976) findings as of the centrality of - affiliation, excellence, and stress and arousal. Bandura (1977, 1982) and Deci (1975) and others pinpoint the incentive force of self determination leading to self esteem or self efficacy. While Zander's (1971, 1978) pride in performance model substantiates the inclusion of morale as an important incentive theme. Pride in the group stimulates a concern for each member's welfare which develops a team spirit and a feeling of unity. The morale of the individual affects the whole group's incentive to proceed. This theme is a potent force, especially in major long term expeditions where working at the forefront of human endeavour is very exacting.

Although these six themes do not cover all the possible incentive motives that could be listed it is claimed that they represent the major incentives. Such a list however can give the appearance that each theme is independent; this is far from the case - it must be expected that some form of interaction will occur between the themes. Risk, For instance, in certain circumstances, risk itself can be a motivational factor itself, but because in climbing it is a major unique concept it is examined separately in this study. Thus the intention in this discussion of motivation and motivational theory has been not so much to present an exhaustive

appraisal of the area as to give some understanding of a basic theoretical framework within which relevant practical examples in sport and in mountaineering could be highlighted, including group motivation and motivation for young athletes.

In considering the motivation of climbers the question is often asked, "Why do people climb mountains? Perhaps we could refer to Mitchell (1983) who puts forward four motivational based reasons:

- 1 "Ridiculous" - this denotes the basic assumptions of some, that climbing mountains is essentially a foolish enterprise and that its participants must be emotionally ill or morally corrupt or even both.
2. "Sublime" - this calls attention to those who focus upon the artistic, poetic, spiritual, uplifting or even transcendental qualities of mountaineering while ignoring the more prosaic character of the climbing enterprise as cold, hard, and sometimes dangerous.
3. "Purposeful" - A necessary job to be done usually in the name of scientific inquiry.
- 4.- "Natural" Modern day accounts of mountaineering have the central theme that climbing is natural and requires no explanation.

Shuttles, in the foreword to Mitchell's book, deals with the question thus:

"One attraction, he answers, is the titillation of achieving physical motion in a tenuous vertical landscape - the delicate push and pull of the boot toe and the fingertips on gritty rock, surrounded by empty air. But that is not all. However thrilling, mountaineering is more than the mechanical exercise of ascending outsized piles of ice and snow and stone. It is also the search for moments of order and clear purpose in a confused and shifting world. The mountain experience, Mitchell writes, is different from ordinary life. "Rules are simple. The game climbers play is difficult and sometimes dangerous but it is one they understand and freely accept. This freedom, this momentary mastery of fate, is of great value. Mountaineers do not choose the easiest way to the top but the most challenging one. They seek not to vanquish an enemy but to discover themselves. The tools and techniques they use are kept in careful sporting balance with the challenges of the peak; the climbing game is a fair one and the odds are kept even. In a rationalized world of amoral inconstancy, climbers have found in their avocation what many others are denied - a full, honest measure of their worth. Mountains demand much. Those who climb discover they have much to give."

# **CHAPTER FIVE.**

## **SITUATIONAL FACTORS IN MOUNTAINEERING.**

### **5.1 INTRODUCTION.**

In addition to the within-person and within-group factors of Risk and Incentive, the context or Situation will contribute its own influence to the success or otherwise of a climb. In psychology the role of situational factors in individual performance has long been recognised and we have already had occasion to refer to Mischel's (1973) interpretation of personality traits in terms of a person-by-situation interaction with the situation often being the dominant component.

### **5.2. SITUATIONAL FACTORS AND PERSONALITY.**

In fact interactionist explanations of behaviour were put forward as long ago as 1935 when Lewin suggested a formula for interaction:-  $B = f(P,S)$  where B refers to the behaviour resulting from a choice of possibilities, or a performance measurement on a scale; where P refers to structural dimensions (physiological and psychological) represented in personality measurement, and where S refers to variable aspects of the situation. More recent research following Lewinian principles have emphasised different aspects, Mischel (1982) and Endler and Magnusson (1976) for instance attribute overriding importance in behaviour to the  $P * S$  interaction, while Flood and Endler (1976) reported a person (trait) \* situation model for anxiety in a realistic competitive athletic environment. Here the measurement of anxiety was based on Spielberger's (1972) state-trait procedures as adapted by Endler and Okada (1975). Rotter, Chance and Phares (1972), social learning

theorists, again emphasise that behaviour varies as the situation does. Rotter's focus is on actual behaviour and the environmental conditions and situations which influence it. This is obviously very much the case for a research problem in mountaineering.

In a more particular sports context, Carron and Chelladurai (1978) suggest that an athlete's interpersonal behaviour is a product of three general sets of forces: 1) factors specific to the situation or environment (operating role expectations, the task demands, influence of other members of the team and of spectators); 2) factors specific to the coach/leader (such as his/her personality, attitudes and need disposition), and 3) factors specific to the athlete (including again personality, need disposition, and attitudes). Kane (1980) points out that to the sports psychologist the interactional approach is of undoubted significance as there has been a long standing recognition of the variable effects on performance of different sporting situations.

Kane (1980) also highlights researchers' current thinking when he notes that:

"Increasingly researchers have also referred to the importance of the athlete's perception and interpretation of the situation and the way in which such perceptions may be idiosyncratic interactions of relatively stable personal dispositions with experimental factors such as previous experience of such dispositions, conditioning and expectation."

Martens (1976) developed a sports-specific measure taking account of scientific rigours of test construction. Kane warns, however, that although the interactionist model is in accord with what must be a commonsense interpretation of the competitive environment, the superordinate importance of the interaction as opposed to the person or the situation in sport will need a great deal more subtle and supportive evidence than that which is currently available; but he adds,

"the orientation to the actual behaviour in situ, a move as it were from the laboratory to the field, undoubtedly has had beneficial effects on research directions."

Thus in the search for the behavioural antecedents of sports performance the direction for research would seem to point to a balance being struck

between maintaining rigour and carrying out subtle field investigations. Such a move seems essential.

### **5.3. SITUATIONAL INFLUENCES ON LEADERS.**

Situational factors have also long been recognised as influential in leadership theory. Fiedler (1967) postulated "that leadership effectiveness depends upon the leader's style of interacting with his group members and the favourableness of the group-task situation." He puts forward three sub-factors of group-task favourableness: the leader member relations, the task structure, and the power position of the leader. According to Fiedler (1967) quality of leader-member relations is the most important factor in determining situational favourableness. Structured or unstructured tasks were also seen as varying situational factors which would have different effects on leaders. For instance the more structured the task performed by the group, the easier it is for a leader to exert influence. The leader's control over rewards and sanction, the degree of authority over group members and the level of support provided by the organisation determines the power position of the leader which depends in turn on the situational favourableness. If the leader's position is a strong one then obviously he holds a fair measure of control, although a leader's position can be weakened by situational change.

Two classes of situational variables were proposed by House and Dessler (1974): 1) the characteristics of the subordinates, (e.g. personality and ability), and 2) the environmental demands and pressures that subordinates must cope with in order successfully to carry out their task and satisfy their needs. House and Dessler subdivided the environment demands and pressures that subordinates must cope with into three categories: the task; the formal authority system of the organisations; and the primary work group.

Another theory which focuses upon the specific situational factors in the behaviour of leaders is postulated by Hersey and Blanchard (1977).

Their "Situational Leadership Theory" proposes that:

"..as the level of maturity of their followers continues to increase in terms of accomplishing a specific task, leaders should begin to reduce their task behaviour and increase relationship behaviour until the individual or group reaches a moderate level of maturity. As the individual or group begins to move into an above average level of maturity it becomes appropriate for leaders to decrease not only task behaviour but also relationship behaviour."

Although the theory has not been empirically tested an example using the parent-child relationship was put forward illustrating the interrelationship of the parameters.

The Normative Model of Decision Making approach looks at the degree to which a leader allows participation by subordinates in decision making - the fundamental premise is that the most appropriate methods with which to arrive at a decision will vary depending upon the nature of the situation. This is particularly important in mountaineering because of the changing nature of the situation as the climb develops. Vroom and Yetton (1973) broadly classified decision methods as 1) autocratic where the leader alone makes the decisions; 2) consultative, where the leader still makes the decision but after gaining information through consultation with subordinates, either individually or collectively; and 3) group decision, where the group including the leader jointly make the decision and the leader implements this group decision.

Chelladurai's (1978) Multidimensional Model of Leadership endorses the important part played by the situation in determining the athlete's behaviour. He views the satisfaction and performance of the athlete as a product of three types of leadership behaviour: prescribed; adaptive; and preferred, which in turn arise from the characteristics of the situation, characteristics of the leader and the characteristics of the group members.

#### **5.4. SITUATIONAL FACTORS AND SOCIAL FACILITATION.**

Mountaineering is nearly always carried out in groups, which means in addition to offering the kind of affiliation and esteem reward described in Chapter 4, the group can also raise or lower the individual's performance through social facilitation. Social facilitation is defined as 'behavioural effects due to the presence of others' (Zajonc, 1965) and comprises two concepts: audience and coaction. Audience implies a passive presence of observers while coaction refers to the presence of others working independently at the same or similar activity. In mountaineering, although fellow climbers also act as an audience observing individual as well as group performance coaction by definition is always in evidence. Wankel (1980) points out that this definition of social facilitation is somewhat restrictive for sport situations because it does not include effects due to modelling, social reinforcement, competitive instructions, encouragement or cheering and so forth. Accordingly, he suggests that Borden's (1980) cognitive model is more appropriate for sport research, where the performer is acknowledged to play an active role in defining the social situation rather than being a more or less passive reactor to it.

Wankel (1984) reviews current literature in his article on audience effects in sport: against the dominant theoretical model of social facilitation that of drive theory (motivation) he prefers a more complex cognitive model which incorporates both drive-like motivational effects due to the presence of others and evaluation apprehension as well as information effects as to what performance behaviour is not acceptable in the observer. In this connection, Borden (1980) puts forward a framework for examining how personal and situational factors influence audience or coaction effects upon performance. A number of researchers, Singer (1965); Vanek and Cratty, (1970); Sherif, (1972); Lombardo and Calatono, (1975); Wankel, (1975a, 1980), Geen (1980) and others have examined how an individual reacts to a given social situation and accordingly how that situation affects his or her performance. It is generally accepted that previous experience, age, gender and personality



will influence the individuals' subjective interpretation of the objective social situation. Crabbe (1971) found in relation to age, for instance, that second-grade children reacted better to learning a motor task in the presence of an audience than did younger pre-school children. While Sherif (1972) found that girls will be sometimes more and sometimes less competitive than boys depending on the particular context (task and environmental) influences. Borden (1980) also notes how "the influence of an audience on the individual also depends on the specific performance requirements." However, although scant objective information exists in this area Missuiro (1964) and Crabbe (1971); Newman, Dickstein and Gargan (1978) view age as an important factor influencing social influence effects. Likewise, Crowne and Marlowe (1964) Carron (1980); Wankel (1975a) put forward the importance of gender although some research was inconclusive.

## **5.5. OTHER FACTORS.**

It can be seen from personality theory and leadership theory that situational factors affect the coach's/ leader's behaviour and group members alike. There are also other situational factors that do have a major impact upon roles and maintenance of group members' relationships which should be noted. As Carron summarises:

" One of these is geographical location within the group- individuals occupying central positions are most frequently chosen to fulfil leadership roles within the group. A second situational factor is the degree of stress present in the situation - both the decision style utilized (not only utilized by leaders but found acceptable by subordinates) and the type of behaviour which is prevalent are moderated by the degree of stress present."

In so far as the present study examines such variables as experience, age and gender seeking to quantify their influence on the climber as a member of a group in changing environmental conditions, we thus address some of the issues outlined in Wankel's concluding comments on future research:

"A number of personal and situational factors have been shown to significantly influence how the presence of observers and coactors affects performance. Further, evidence is generally consistent with the view that how a given factor influences an individual's behaviour is contingent upon the individual's subjective interpretation of that situation. It would, therefore, seem appropriate for future researchers to pay greater attention to how situational factors influences an individual's subjective interpretation of the social context (its nature and importance), the task requirements, his or her performance capabilities, and the potential outcomes and their perceived importance."

Both proximal and distal situation factors exist in the present research. The proximal situational factors are represented by the group in which the individual is climbing. However the emphasis in this chapter will be on distal situational factors as represented by:

- a. The type of route with its variation of terrain.
- b. The prevailing weather conditions.
- c. The season and time of the day.
- d. Physical fitness.

Not surprisingly, psychologists have had little to say about such specialized matters, and the following presentation is therefore mainly atheoretical.

## **5.6. DISTAL SITUATIONAL FACTORS.**

### **a) The Type of Route with its Variation of Terrain**

Any route up a mountain has obviously variation in terrain and with it varying levels of difficulty. If distance to be travelled is calculated along with a sound estimate of the height ascended then descended using Nairsmith's rule, (Langmuir, 1969) or similar, an estimated route time can be calculated.

The level of difficulty index is based on the prevalence of certain types of terrain. e.g. rugged and exposed or flat and sheltered. Again, routes with marked paths make navigation easier, while featureless terrain

puts more onus on the navigational skills of the climber. Further the extent of easy walking as against exposed ridge walking need to be estimated. Climbers involved in the present main study followed a full range of easy to severe routes. A climber taking an easy route would find broad paths clearly marked, no steep ascents, slightly long routes, rugged but not exposed. Climbers tackling a severe route would be encountering an uncertain route with very steep ascents, some climbing, very rugged terrain indeed and a majority of exposed ridge with steep drops either side. Obviously, the time a climber would take to complete a climb would also vary with his fitness, but an average climb would take something in the region of six hours to complete.

#### b) The Prevailing Weather Conditions.

Whatever route is chosen and for whatever reasons, no climber ignores the prevailing weather conditions. Any route even a very easy well-marked track can be transformed in a very short time by a heavy deluge. Strong winds can render "safe" places highly dangerous, where even very experienced mountaineers will take the utmost care.

An accurate assessment of the effect the weather conditions will have on a group is of paramount importance. The accuracy of weather forecasts has improved in the last few years, but still remains very broad and in the event often inaccurate. A sound knowledge of local weather and in particular mountain weather is necessary to make accurate predictions possible. Those walking in valleys or in sheltered regions experience much better conditions than those walking on exposed ridges or mountain tops. If high ground is to be negotiated, then the weather forecast must include some information on cloud level, snow line and an estimate of temperature and wind speed. The wind speed is of importance in all areas, especially in winter, as the chill factor can drop the temperature considerably.

#### c) Season and Time of Day

The difficulty of any route is a dynamic ever-changing factor varying with the seasons and the weather conditions. A route in winter,

for instance, can be rendered more difficult by the fact that fewer daylight hours are available to complete a climb, or just by the cold itself. Obviously, in winter the weather conditions play a more important role in the safety of the climber because of the severity of the cold, and because adverse conditions will be encountered; often the terrain is heavy with snow and exposed rocks and ridges are slippery from ice.

d) Physical fitness.

The fitness and willingness of the group to work is also a key factor. Obviously, a fitter and more lively group will cover terrain much more quickly than a lethargic uninterested group. Groups on expedition or on very long climbs may have heavy equipment to carry and consequently may be more liable to suffer from tiredness and fatigue. Careful planning and assessment can eradicate any inconsistencies that could occur because of these variations. Nairsmith (1968) and others have produced graded tables estimating the time groups with different fitness levels and loads to carry will be expected to take on a climb, which can aid the mountaineer in the difficult task of assessment.

If an accurate assessment of the task has been made and a similar accurate estimate of the group's ability has been calculated then goals can be set with some degree of realism. This goal-setting allows for some level of uncertainty, so that a challenging adventure can be pursued. The thrill of the climb cannot be enjoyed if the task is too difficult, nor can feelings of accomplishment be gained if on the other hand the task is too easy. Mountaineers are normally motivated by a desire to succeed, which in Atkinson's (1957) terms would mean that they would choose tasks of intermediate probability of success. Emerson (1966) in his American Everest expedition study also found this to be the case.

Thus any group, thinking of undertaking a climb in the mountains needs to take into account Situational factors, although in themselves they are only part of the total evaluation necessary in a climb.

## **CHAPTER SIX.**

### **SETTING THE SCENE: A GENERAL INTRODUCTION TO THE MAIN STUDY.**

#### **6.1 INTRODUCTION.**

Following the formal presentation of the theoretical parameters in chapters 2, 4, and 5, the present chapter is written in a more informal, semi-narrative style in an effort not to lose the qualitative aspects of the research with which we set out. A further benefit is that hypotheses or expectations about research outcomes can appear as more naturally emergent from the problem context.

#### **6.2 BACKGROUND OF THE CLIMBERS .**

The climbers were drawn from Kent Schools either undertaking a week's mountaineering course at the Kent Mountain Centre situated in Llanberis, North Wales, or undertaking a Duke of Edinburgh's Award Expedition in a wilderness area, such as Dartmoor or the New Forest.

For a number of months prior to visiting the centre all individuals will have been preparing for the course at school. Technical skills of map reading, compass work, camping, cooking and walking will have been given a good grounding. Individual abilities will have been noted in the safe confines of school. Fitness programmes will have been followed to ensure that every member of the team is physically ready to tackle the rigour of a major expedition. During this period aspirations and thoughts on what goals can be attempted are mulled over both in the mind of the individual and in discussion with group members. Although the actual composition of the groups is not yet known, valuable information about people, their abilities, skill and experience will be assimilated. Certainly personalities, friends and 'significant others' will have shown something

of their willingness to achieve and to associate. The important decisions of climbing companions will probably be made during these informal hours. Confirmation of many of the attributes of individuals will be observed when groups undertake small trips to test both their equipment and their general competence. Individuals will begin to realise their position more and anticipate the forthcoming adventure. During this period too, teacher and pupil interaction warms up and communication channels will have become more informal.

### **6.3 TRAVEL.**

When the day finally comes to embark on the mountaineering course much excitement and enthusiasm will be shown, although some apprehension will still lurk beneath their laughter and good humoured fun. A coach or bus journey of approximately 300 miles is before them. Whatever arrangements and friendship patterns had been established while undergoing the preparation phase will now be reinforced as friendship groups congregate in similar areas of the coach. Discussions, the sharing of thoughts, ideas, fears and aspirations will be common banter throughout the journey. This anticipation for the adventure ahead has its own value for setting expectations. The dominant and highly confident members of the group will boast of their exploits and how well they are going to do. This may of course put pressure on them for the rest of the trip. Others less vocal will still feel the same tempo for achievement and could resolve within themselves to do as well, if not better. Because of this opportunity for enhancement of self image; peer recognition and possible increase in status, being successful on this adventure takes on a motivational force of its own.

### **6.4 RESIDENTIAL.**

Accommodation is in a large house situated in beautiful countryside with mountains all around. The setting of the house alone cannot fail to have an effect on the potential mountaineers. This very feeling was endorsed by John Ingham (1983) in his article, The Snowdon Experience. Are You Tough Enough For This Challenge?

"What you see from the moment you unload your car into one of the basic rooms at Plas y Brenin is almost mind-blowing. The mountain outside your window is huge terrifying and fills you with a sense of awe. It is these mountains which have an incredible and compelling attraction to many people"

and goes on to add:

"youngsters soon cotton on even if they never come back, they are experiencing something memorable".

Here they sleep in dormitories, 4 or 6 to a room. They eat together, share all the duties of running the house together, including some of the cooking and washing up. They are organised into duty groups with every group taking its share of the work load. This is one of the early experiences they will have of working together and with it learning to trust each member of the group and each group to honour its responsibilities, otherwise nobody eats. A camaraderie begins with the first duty group making breakfast for 30 odd people. "Choice of cereals, followed by egg, bacon and tomato, toast, tea and coffee." A good start to the day. This eating, sleeping, working and living together in the close confines of even a large house helps people to get to know each other.

## **6.5 ACTIVITIES PRIOR TO THE EXPEDITION PROPER.**

Depending on the school's objectives a number of activities may be planned. The first day may be an introduction to the mountains, where techniques and skills can be revised in the comparative safety of a low level walk. This gives people an opportunity to assess the situation, as well as other members of the group and their own competence. Group composition will be formulated partly from friendships and partly from ability, with some free choice within those bounds. e.g. if three friends were of the same ability they would be allowed to go together. This choice is of importance because each group has got to work as a team. Much of the group formation will thus have already taken place with some norms established. They will have discussed objectives, set some goals, formulated some attitudes towards the environment as well as towards group members, leaders and instructors. They will have

expectations, a degree of uncertainty as to the outcome, an anticipation of the adventure and a high level of motivation. Whether this is to achieve or to affiliate will depend on their incentives and conception of the challenge. Underlying all their thoughts will be, just how dangerous is it? This becomes particularly poignant once they have been out into the hills and mountains; they are living in the wild country and will have already experienced perhaps the vagaries of the weather. This first hand knowledge can serve to allay any fears about the expedition, but it can also add to the uncertainty of just how well they will do. The task previously was a little abstract; the mountains were perceived as much smaller and not so remote. The close proximity of the environment has its own effects on the individual. It seems to heighten his awareness of the whole situation. This may cause him to reassess his capabilities or look for some support from his group, or even question whether the task was more difficult than he thought.

## **6.6 GROUP PROCESS AND EMERGENT LEADERS.**

This group interaction as suggested earlier, will have been going on throughout the trip. Confident and assertive members will be trying to persuade others of their ability to lead the group or be the major spokesperson. Others will be looking for reassurance from the group members, but all will be wanting to maintain or readjust their position in some way until the structure is acceptable and relatively stable. However, in the accompanied groups another factor can influence the group's structure and possible communication network, and this of course is the teacher /leader. Some complexity arises here in that the teacher/leader is in control of the rewards and punishments so that any young climber-leader in the group will have to work through this adult leader. This is a circumstance not unknown to the group as the pattern would resemble the framework experienced with teacher influence at school, though the relationship is much more informal in the mountain context. The leader's first intervention into the proceedings would probably be at the planning stage, although some contact and relationship may have been built up when on the acclimatization trips. The



interaction within the group and with the leader would have taken on a more intense nature when the group expedition planning stage was reached, especially when the route schedule was compiled, because at this stage the main goals, objectives and responsibilities would be established, and any person who had little influence and was not recognised as a leader would consequently, have very little control on what was planned. The choice then would be either join another group or comply with what the majority suggested.

## **6.7 CUMULATIVE EFFECTS OF THE CLIMB.**

The expectations here are that the following factors will affect the climber as the climb develops.

### **6.7.1 Effects on Self.**

The following frameworks for each of the factors, Incentive, Risk acceptance, and Situational, highlight the cluster of indicators for each main factor. The researcher's expectations are that each indicator will influence the climber as the climb develops, stage by stage.

#### **a) Incentive Indicators.**

- realisation of the goal and the feeling of a sense of achievement...
- level of the challenge...
- perception of self image through self esteem...
- level of morale...
- satisfaction with how things have gone so far...
- how well the group is working together...

#### **b) Risk Indicators.**

- knowledge of performance...
- demonstration of skill, confidence and fitness...

- sense of control of themselves and the situation...
- willingness to accept the level of risk encountered...
- having a degree of uncertainty still...
- the possibility that an accident or mishap could always happen...
- group supportiveness...

c) Situational Indicators:

- physical conditions.
- degrees of tiredness even exhaustion...
- sore feet, blisters and aching limbs...
- heat, wet, cold, and hunger...
- route difficulty and ruggedness of terrain...
- restricted movement from pack and clothing...
- exposure to the weather and terrain...
- variation of wind speeds, rain, and snow...

6.7.2. Effects on the Group:

Similarly, expectations here are that the following factors will affect the group as the climb develops.

a) Incentive Cluster Effects.

- status within the group confirmed...
- the feeling of belonging...
- the perception of self from others' reactions...
- the acceptance of membership, giving a sense of pride and satisfaction...

b) Risk Indicators.

- a willingness to accept risk...
- an observation of possible dangers...
- an observation of any possible conflicts; struggle for power.
- members demonstrated their skills and abilities, their strengths and weaknesses...

c) Situational Indicators.

- Group physical condition.
- progress of the slowest member...
- determination to overcome conditions...
- walking patterns and group interaction...
- evaluation of route difficulty and terrain...
- overall influence of the weather conditions sun,  
wind, rain, snow...

## **6.8 SETTING OUT STAGE OF THE MAIN EXPEDITION.**

When each group is finally gathered together to collect their packed lunch and last minute instructions, much will need to have happened to them as individuals, irrespective of their previous level of experience and much will have happened within the group for it to be hopeful of a successful expedition. Thus as they set out they will have formulated a number of perceptions about the imminent expedition.

At this setting out stage, when the first evaluation by questionnaire is made, the responses will be coloured by the members' preliminary experiences at the Mountain Centre as they have prepared for the climb.

When the group were ready to depart the instructor gave to each member of the group a 'data collection card' and reminded them that the questions were in two parts. The first part of the question asks them to think for themselves the second part asks them to think for the group. They were not allowed to confer or discuss any of the questions but could ask the instructor for clarification. The instructor made sure that everybody could hear and read each part of the question twice with a pause in between and then subsequent questions in the same manner. The climbers' completed the card part by part question by question. When all the questions had been read and the cards completed they were collected by the instructor and the expedition began. Instructors also, where and when possible, recorded (on a portable tape recorder) any discussion by the climbers about the questions and the forthcoming climb.

Plate 1. Group seting out from Llyn Ogwen: Pen yr ole wen

Plate 2. En Route: Pen yr ole wen

Plate 3. Walking along the Carnedd

IMAGE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES



## **6.9 THE CLIMB TO THE HALF WAY STAGE.**

### **6.9.1 Preliminaries.**

After completing the Setting Out questions each group were bundled into mini-vans and taken to the start of their expedition. This ride normally took about 30 to 40 minutes by and through the mountain passes. Often the early morning climbers could be seen on the famous slabs of Llanberis pass where some of the most testing climbs in the world can be found. Excited chatter fills the air. The adventure has begun and everybody is aware of the physical challenge ahead.

Somebody says 'Lets go' and the party begins the steady climb upwards.

Plate 4. En Route: approaching Y Lliwedd, Snowdonia

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The first impact on the climber is the sheer bulk of clothing, the weight of the rucksack and the feel of the boots. A light banter of remarks with quips such as 'Can I go back now?' tell us that the physical requirement of the climb is very much on the minds of everybody in the first few hundred feet. What is going through their minds as the journey progresses? First responses were collected at the centre and now the same set of questions will be asked again at the first major break. Any differences between the two sets of response will reveal something of what has gone on in the intervening period.

The expectations here are 1) that as the group left the centre motivation was high; 2) that the structure of the group had been established in relation to the perceived nature and demands of the expedition, (this structure included communication, influence, power and control networks;) and 3) as the climb to the summit comes up to half completion the previously highlighted main factors and their cluster of effects would be influential.

On reaching the halfway stage considerable physical work would have been undertaken: a typical climbing time would have been one and a half to two hours. The type of terrain and general characteristics of the route would have been experienced. Some of the weather conditions would also have been experienced, all of which as highlighted earlier would influence the climber. An additional expectation would also be appropriate here, namely, that being able to evaluate the weather conditions experienced so far, would give the climber a better practical base for accurate predictions.

From the very nature of walking in the hills teams break up into smaller groups of twos or threes. Those of similar walking speed and stamina tend to be in close proximity. Interaction after one or two hours climbing will, therefore, be between those of similar physical skills and fitness levels.

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Plate 5. Typical grouping during climb: Pen yr ole wen

However, leaders recognise persons unable to go any faster and employ a number of integrating techniques to keep the party together rather than letting it become a 'crocodile.' This is necessary for safety as well as good sense reasons to keep the team working together. Even closely-matched groups physically and ability wise find gaps occurring from time to time. The hardest place to be is at the back. Experienced climbers normally slot into a walking rhythm that combines speed with economic movement over the ground. It is the uneconomic use of energy that quickly tires out the inexperienced. Good leaders recognise these signs and make suggestions on the best way of moving over the varying terrain.

### 6.9.2 DYNAMICS OF THE GROUP.

A degree of group development should occur in relation to how well members have done so far and in the light of how the risk and incentive factors have affected each individual. Depending on any changes in priorities or any readjustment of control and influence occurring during the climb interaction between members in the group could well alter. However, if the group members were effective in maintaining cohesion, showed they were interested in the welfare of the group and each individual, and demonstrated trust in each other and pride in achievements, then little change would occur.

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Plate 6.Snowdon summit in sight viewed from Llyn Llydaw.



Ongoing throughout would be the general motivation of the group with confirmation of members' positions as the going gets tough. If however the outcome of the climb became too uncertain then some readjustment might need to be made, although it is well known that in times of increased stress or crisis groups are more willing to take autocratic leadership, which would mean less or no interaction. As the group gets ready to respond at this second stage many of the outlined areas of discussion would have been resolved.

#### **6.10 RESPONSES ON THE SUMMIT.**

The main aspect of the goal will now have been achieved. The summit will either have been reached or an alternative plan will have been carried out. Sub goals may have taken over. Confirmation of position and status within the group will have occurred, together with some feeling of achievement and success. A suitable place to make the Summit set of responses needs to be found. This is not always easy because by their very nature mountain tops are bleak places. Some groups may have completed their response schedule in the mist and rain with wet conditions all around; others in beautiful sunshine with clear views and dry conditions. However, all leaders and teachers were well aware of the importance of keeping the pupils interested and attentive to the questions irrespective of the conditions. This, of course, is one of the difficulties of field research, but one in which with care ecological validity can be maintained.

Plate 7. On Top: group on Moel Siabod

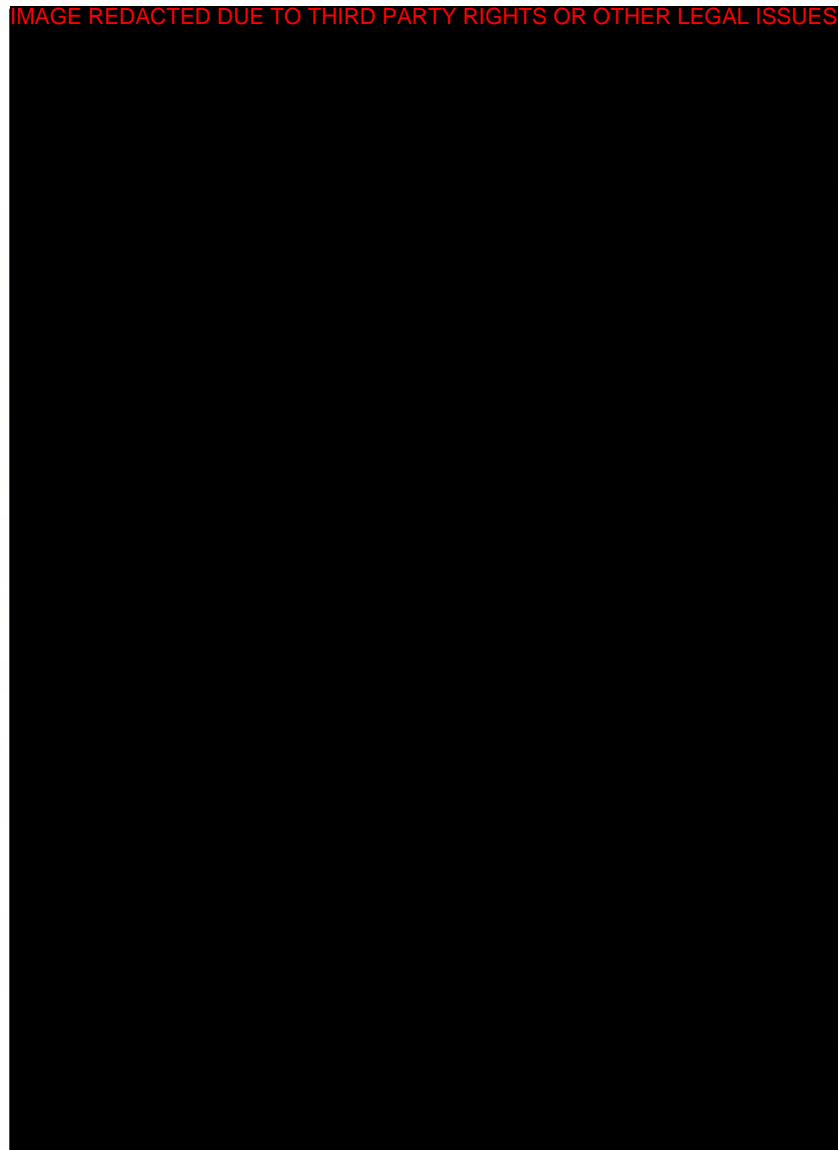


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Plate 8. Scene on Summit:  
Snowdon

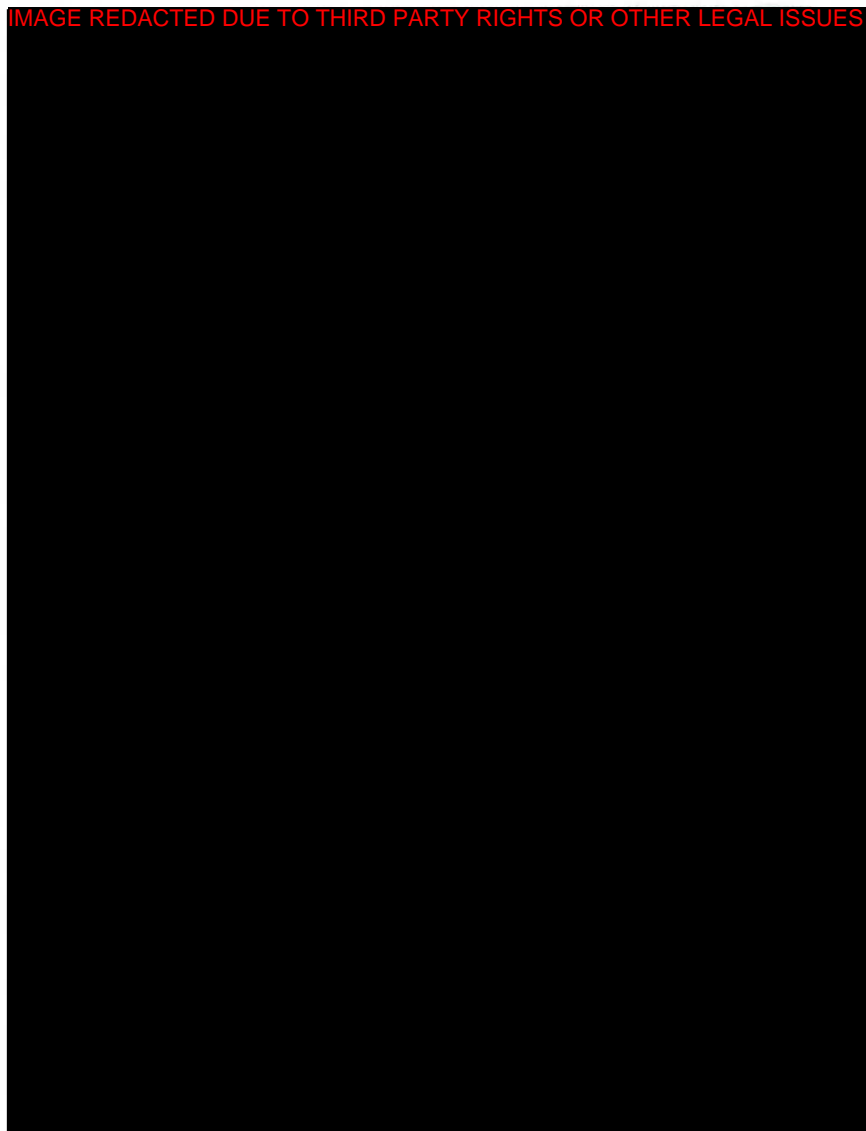
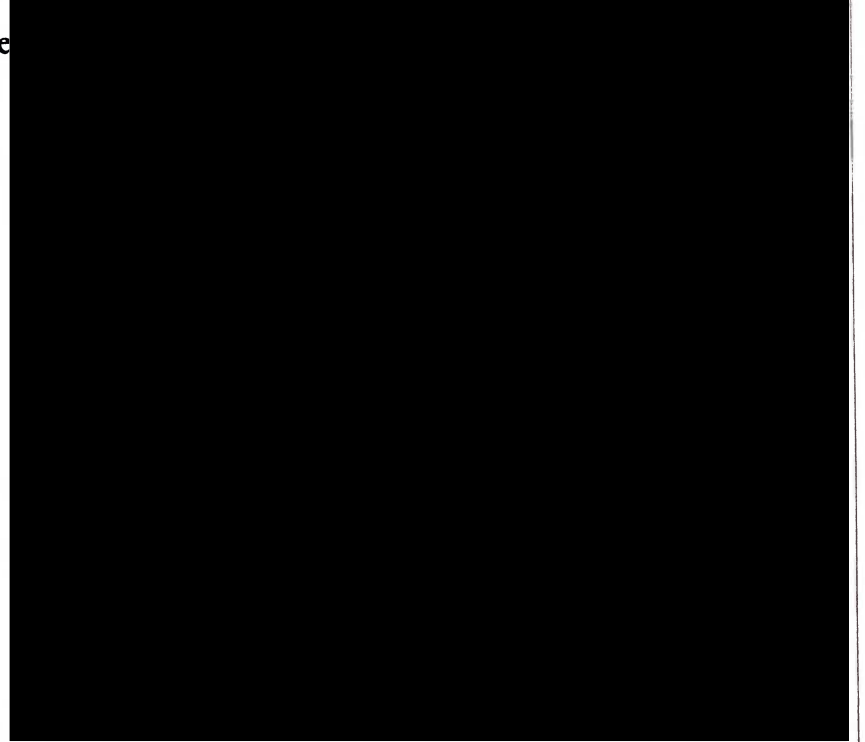


Plate 9.

Same scene one minute later

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## **6.11. THE RETURN AND RETROSPECTIVE STAGE.**

The "Return" response is in two phases:-

- i) The descent to the basecamp.
- ii) The retrospective overview of an expedition that has been completed.

### **6.11.1 The descent to the basecamp.**

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Plate 10 The descent: Zig-zags Snowdon.

After the exhilaration of the achievement, thoughts move to the return journey. Because the goal has been achieved, some can find the

descent something of a let down. This can be one of the reasons why people want to return as quickly and as easily as possible. Some groups, however, may still maintain their motivation to continue with the expedition as they may have set a challenging return route in their original plan. In this case their goal then will not be fully achieved until they reach the base camp. Again, some groups maintain morale and enthusiasm by investing their attention in a secondary goal such as observing the flora and fauna, while others may keep in good spirits by interacting with other members of the group.

This understanding of the needs of the other members of the group can be an important part of the whole process of affiliation, especially as they will all have shared the good and bad moments together. As the party progresses further down the mountain or closer to base, the leader's power can diminish, along with an increase in confidence of the group that they will successfully complete the mission. However, leaders will also feel the physical effects of the climb and know that tiredness, cold and hunger can slow a group down and make an easy descent a dangerous one. It is not surprising that behind that confidence a little caution can be seen by members seeking from time to time reassurance that everything is going well. Risk, although no longer prominent in the mind of the climber, can never be dismissed. The weather can change, an accident, no matter how small, can happen, with possible drastic consequences. A long stop can delay the party, and could mean coming off the mountain in the dark. Accordingly, this last leg is a time when climbers need to take great care and be well aware of the condition of the party, the difficulty of the route and the state of the weather. Thus in addition to earlier expectations concerning accurate prediction of the weather conditions, the researcher also expects; that being able to evaluate the situational conditions and consequently to predict possible outcomes as outlined in the situational cluster effects on both the individual and the group, would give the climber a greater awareness of safe climbing practices. This is especially pertinent when descending a mountain in poor light or in bad weather where such activity can be a highly dangerous.

For some climbers, if the weather does deteriorate, the level of morale can get lower. Others find an incentive in being able to demonstrate their independence or superior strength or ability. But all know that the success of the expedition rests on everybody working together. This means going at the pace of the slowest and encouraging each other whenever necessary. Interaction here is very much of an affiliative and friendly nature with each individual concerned for the welfare of each member as well as for the group as a whole. If the group encounters major problems or difficulties where important decisions are necessary, then the degree and style of interaction will depend on the amount of stress on the group at the time or the level of danger that confronts them. There is good evidence that groups under stress are quite willing to respond to authoritarian leadership or invest their decision in the most competent. In such cases interaction will be minimal and the leader will take over.

#### **6.11.2 RETURN ARRIVAL; RETROSPECTIVE OVERVIEW OF THE EXPEDITION.**

Now the expedition has been completed successfully or otherwise, depending on the goals set at the beginning, people can reflect on their achievements. For some climbers these may be greater for other less than expected. The full value and benefits may not be felt until much later when the climber has had more time to reflect fully on the experience. However, what is important here is to capture the individual's immediate feelings and perception of the expedition. Certainly he or she will know if realistic goals had been set; will have found out something about self-feelings in the group, and will have felt some satisfaction and pride or disappointment. All of these feelings and reflections will give the climber a more informed position from which to evaluate the incentive, risk and situational factors in the climb. Moreover, no simulation exercise would give such depth of understanding as obtained from the real climb.

The researcher hopes that this scene-setting chapter has been useful in giving the reader some insight into the possible influences on the

climbers while on a typical expedition. From it one can see that there were a number of influences on the climber before, during and after the expedition, many of which the researcher has tried to quantify in the present study.

We now turn to a more formal statement of the research design in Chapter 7.

Plate 11. Back at base.

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# **CHAPTER SEVEN.**

## **DESIGN OF MAIN STUDY:**

### **A FIELD STUDY OF PERCEIVED RISK, INCENTIVE AND SITUATIONAL INFLUENCES IN YOUNG CLIMBING GROUPS.**

#### **7.1 INTRODUCTION.**

So far the available literature has been drawn upon in order to link theoretical areas of group dynamics and decision making with practical aspects of finding what factors may be at work in mountain groups while on expedition. Past investigations have been used as a foundation and as a resource for practical implementation of the research problem.

Mountain climbing performance from an individual's psychological standpoint is broadly a function of three factors: Incentive, or what draws the climber to the top, Risk, or what limits the response to that incentive, and Situation, or what real-world constraints are operative during a climb. Thus the main study adopts a considerably more enlarged perspective relative to the earlier studies described in Chapter Three, which were concerned only with the single aspect of Risk and in particular the phenomenon of the risky shift. A similar focus on perceived incentive and on situational factors alongside perceived risk, gives the study a more comprehensive approach to the research problem of what happens in climbing groups comprising young people between the ages of 14 years and 18 years.

The perceived feelings, thoughts and aspirations of the individuals in the groups were recorded at four stages of a major expedition; (i) before starting out, (ii) en route, (iii) at the summit, (iv) at return to base. The main method was a "questionnaire" administered orally and on actual



mountain location. Tape recordings and video methods of data collection were also used, although they play only a background role in this presentation.

## **7.2 SAMPLE.**

The investigation concentrated on school-aged groups rather than highly experienced adult groups who undertake major and often commercially financed expeditions. When school-aged groups undertake expeditions they are either accompanied by an experienced leader or "unaccompanied" in the sense that they are supervised, but allowed to lead themselves. Both kinds of group operate in wild or wilderness country, an important criterion for the design of the study.

Children between the ages of 13 years and 18 years were drawn from 14 Kent schools. Data were collected over a period of 10 weeks, while the children were attending week-long residential outdoor activities courses.

For accompanied groups, the Inspector for Outdoor Education for Kent was asked to recommend schools that could fulfil criteria concerning:

1. Availability.
2. Cooperation of headteacher and teacher responsible for the group.
3. Varied experienced groups.
4. Responsible pupils capable of reasonable judgement, and willing to assist.
5. Schools allocated places at the Mountain Centre.

Each school that attended the mountain centre selected its own groups, six persons to a group. Generally three or four groups per school were under study in any one week.

The final accompanied sample was made up of 10 groups (n = 59 persons.) four experienced groups and six less experienced.

For unaccompanied groups, the sample was obtained through the Duke of Edinburgh Specialist Officer from Kent County Council who recommended five school-aged youth groups that could be approached to

assist.

The final unaccompanied sample consisted of 8 groups 4 experienced groups and 4 less experienced groups. (n = 39 persons.) The total sample was thus made up of 18 groups (N = 98 persons), eight experienced groups and ten less experienced. A descriptive breakdown of the sample was as follows:

- i) Gender: Male n = 76 and Female n = 22
- ii) Type of School: Grammar/Technical n = 51, Secondary Modern n = 47.
- iii) Age range: 14-15 years n = 32; 15-16 years n = 60; and 17-18 years n = 6.

For purposes of this study individuals in groups were classified as follows:

### **7.3 CLIMBER VARIABLES.** These were of two kinds:

#### **(a) Biographical Variables.**

- i) Gender: Male, Female.
- ii) Type of School: Grammar/Technical, Secondary Modern, Special.
- iii) Age range: 14-15 years, 15-16 years, 17-18 years
- iv) Group status: Accompanied, Unaccompanied. (by an adult leader)
- v) Group Experience: Inexperienced, Experienced, Very Experienced.

#### **(b). Instructor-rated Variables.**

The following classifying variables were estimated subjectively for each person/climber by the teachers or instructors prior to the groups commencing their expedition. All variables used a 5 point scale.

- i) Ability: refers to the skill, knowledge and competence of the individual to climb.
- ii) Fitness: refers to how well the person could endure physical exertion.
- iii) Experience: refers to the number of trips,

expeditions or similar activities that the person had previously undertaken.

iv) Risk Level: refers to how risky the person was rated in climbing situations.

v) Route Difficulty: refers to the type of terrain, steepness and exposure encountered on the chosen route.

vi) Weather Conditions: refers to the prevailing weather conditions at the time of the climb.

vii) Commitment: refers to the level of involvement and willingness to contribute to the expedition.

These variables are subsequently referred to generally as instructor-rated variables

#### **7.4 GENERAL PROCEDURE AT SCHOOLS.**

The cooperation of the headmaster was sought first by letter and followed up by a personal meeting where the reasons for the study and its methodology were explained. Teachers and pupils undertaking a visit to the Mountain centre were also met. A full discussion about the study was held where the pupils cooperation was sought and any queries, at this stage, dealt with. Teachers were given four Questionnaires, one for each stage of the climb, (Appendix iv), a plan of the study, and instructions on how to administer the questionnaire (Appendix v). They were also given data collection cards and shown how climbers' responses were to be collected. All this was done well in advance of the expedition to ensure that both teachers/leaders and pupils (climbers) were fully conversant with the procedure.

#### **7.5 LOGIC OF THE RESEARCH DESIGN.**

A profile of an expedition was planned with questions to be administered at four stages or occasions: 1: "Setting Out" while at base; 2: "En Route" after a significant part of the expedition had been completed; 3: on the "Summit", when the objective or goal had been achieved and 4: when the group had "Returned to Base"

Table 7.1 shows the structure of the obtained data for each of the four stages. Each climber had to answer a set of questions relating to him or herself both at that stage and as predicted for the next stage, as well as a parallel set of questions on his or her perspective of the group as a whole.

**Table 7.1.**

Stage 1.(Setting Out) and the same for Stage 2..3...4.

	Self	Group
Now (actual)	a	c
Predicted	b	d

## **7.6 COMPILATION OF THE QUESTIONS.**

A standard schedule or 'grid' of questions was constructed to measure the status of the individual at the successive stages of the expedition. By standardizing the substance of the grid questions across all occasions, comparisons could be made of responses and any changes quantified.

A broad collection of factors that influence individuals and groups in outdoor pursuits were considered from a number of sources.

- i) Review of the social psychological and other related literature
- ii) Readings from bibliographies and accounts of expeditions by great adventurers.
- iii) The researcher's own 30 year experience with school children and university students.
- iv) Recommendations and ideas from instructors and experienced people in education.

After much consideration of the main theoretical interest, some 150 questions were narrowed down to three principal constructs, Risk Acceptance, Incentive and Situation, comprising 15 questions in all. The reduced interview schedule was piloted first by asking teachers and instructors to comment and make suggestions. A second pilot was then undertaken in which the revised schedules were completed by three groups on a mountain expedition.

**Incentive questions comprised six constituent themes:**

1. Goal realization
2. Morale
3. Challenge
4. Satisfaction
5. Esteem
6. Cooperation

**Risk also comprised six themes:**

7. Confidence
8. Willingness to accept risk
9. Support
10. Tolerance of Mishap
11. Sense of Control
15. Uncertainty

**Situation comprised three themes:**

12. Physical condition of the Individual/group
13. Difficulty of Route
14. Weather Conditions

(Note: numbers refer to the items on the questionnaire, Appendix 4)

It can thus be seen that make-up of the constructs was determined by conceptual grouping and not by factor analysis or related procedures. It should also be noted that the construct or cluster labels Risk, Incentive, and Situation inevitably accommodate some items less well than others, and for this reason labels should be treated as no more than global or shorthand references to a given cluster.

The questions themselves each had four parts as indicated in Table 8.1:

Part (a) requesting an actual response - and making reference to assessment of oneself at that particular moment.

Part (b) requiring a predictive response - which made reference to the anticipated perception of oneself at the next

stage on the expedition.

Part (c) was analogous to (a) except that the reference was perception not of oneself but of the group.

Part (d) was analogous to (b) except again that the reference was perception not of oneself but of the group.

## **7.7 ADMINISTRATION OF QUESTIONNAIRES AT EACH STAGE.**

7.7.1. Four schedules were prepared, printed on laminated cards, one for each occasion as already described. Copies of schedules in the form administered are shown in Appendix iv. The form of the schedules differed only in verb tense and not in content. Thus the same set of questions was asked (read) on each occasion during the climb, as follows.

Occasion 1. "Setting Out." This schedule was given just prior to the group setting out on the expedition.

Occasion 2. "En Route". About 2 to 3 hours into the expedition when some hard work had been completed.

Occasion 3. "Summit." The main goal of the expedition had been achieved or the mountain had been climbed.

Occasion 4. "Return." When the group had returned from the expedition - a retrospective view. Also at this time, some 45 further questions were asked to obtain greater detail of the expedition as a whole.

## **7.6.2 DATA COLLECTION CARDS.**

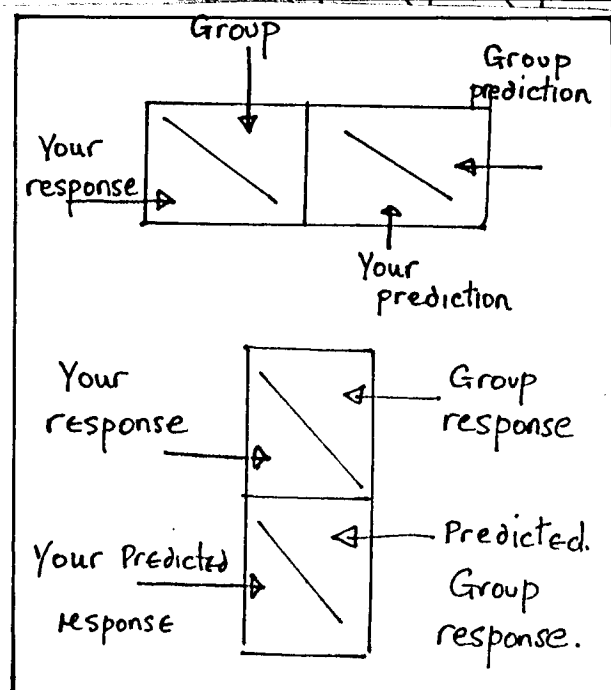
Data were collected on orienteering cards with sections subdivided to take the responses of the four questions. e.g. self, group (actual) self, group (predictions.) These cards, as were the questionnaires, were colour coded so as to represent the four stages of the climb, (white - setting out, green - en route, pink - summit, grey - return). This was for quick identification especially in inclement weather and to ensure that completed cards were for the correct stage of the climb. As previously outlined, instruction on how to complete the card was given so that each person

clearly understood the format. In addition, questions from the pilot investigations that were found to be more difficult to understand were highlighted on a separate sheet and given to teachers/leaders with their procedure details. During the operational phase of the study no difficulties were encountered.

### 1. Diagram of Card

1	2	NAME _____ SCHOOL _____																
3	4	<u>Return</u>																
5	6	Answer All Questions on a 1 to 5 scale.																
7	8	<table border="1" style="width: 100%;"> <tr> <td>LOWEST</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>HIGHEST</td> </tr> </table>										LOWEST	1	2	3	4	5	HIGHEST
LOWEST	1	2	3	4	5	HIGHEST												
9	10	11	12	13	14	15	16	17	18	19	20							
21	22	23	24	25	26	27	28	29	30	31	32							

### 2. Diagram of scoring.





Thus every person connected with the study; teachers, leaders and students, was carefully briefed as to the nature of the study by the researcher. This briefing emphasised the need for each person to act as normally as possible during the data collection periods and also to maintain concentration. Instructions in completing the data collection cards were given before the expedition proper to ensure accuracy. In all cases a good understanding and response was obtained.

### **7.7.2 GENERAL PROCEDURE AT THE MOUNTAIN CENTRES.**

At the mountain centres wardens and staff were carefully briefed by the researcher to ensure once again that procedural arrangements for the study were clearly understood and were carried out following the same procedure with each group taking part in the study. Briefings and personal meetings were conducted with the utmost care by the researcher, because the attitude and commitment of the teachers/instructors and pupils to the project was crucial to its success. Thus teachers/instructors were requested to ensure that all areas were clarified before any data were collected and if any uncertainty existed then further careful explanations were given. In all cases a good understanding was obtained and no group reported any problems with the procedure. The only criticism might be the time it took to complete the cards, although this improved with practice.

## **7.8. HOW THE STUDY WAS CONDUCTED.**

**7.8.1. Accompanied groups.** (that is, groups accompanied by an adult leader while on their climbing expedition.)

Schools visiting the Mountain Centre normally have a challenging programme culminating in a major expedition or climb. It was during this expedition that data were gathered. The resident instructor at the centre coordinated the procedure for the administration of the questionnaire. He controlled the distribution and allocation of the sets of data collection cards and questionnaires for each group. (It will be recalled that the form giving general explanation of the investigation, requests to instructors and how and when to administer the schedules had

been handed to the teachers/instructors responsible for the school trip some weeks prior to the visit to the centre. Also discussion about the format and the questionnaires had been conducted at that time.)

During the planning phase for the expedition the young climbers were briefed on the format of the questions to be asked and how to complete the data collection cards. The times and places for completing the questionnaires, were also arranged as far as was possible. The first schedule at "setting out" for instance needed the exact meeting place and time to be stated for each group so that all groups could complete their questionnaires independently. It was found from the pilot studies that this needed particularly careful planning. (see Section 7.10.)

Thus the teacher/leader was made aware of these possible delays and was asked to give constant reminders to climbers where and when to meet. The first questionnaire schedule was completed just before the group left for their climb. Each person was given a data collection card (white) and a pen/pencil and the leader/teacher read each question to the climbers who responded question by question. When everybody had completed their cards the instructor collected them and the expedition began. The "en route" and "summit" data collection cards and the questionnaire schedules were carried by the leader/teacher, and were completed at the appropriate phase in the climb. When all four schedules had been completed at the end of the expedition the resident instructor collected them all together and stored them in a box. These were clearly labelled with the name of the school, date, time and place. The next school to visit the centre went through the same procedure. As well as data collection cards, tape recordings of group discussions while on their expedition were also labelled and stored for safe keeping. The last set of schools to complete the expedition were accompanied by the researcher who also videoed aspects of the schools' programme and in particular phases of the expedition.

**7.8.2. Unaccompanied groups.** (that is groups that were supervised but did not have an adult leader with them during their expedition.)

A very similar procedure was followed by these groups, the main

difference being in the data collection while on the expedition, (en route and summit.) For Duke of Edinburgh group expeditions the common practice is for groups to meet supervisors at various designated check points which are pre-planned. Here the group either leaves a message (example in appendix vii) giving time, state of party and next scheduled meeting spot with the supervisor, or is met by the supervisor. The en route and summit questionnaires were administered at each of these check points. Groups were generally very accurate on timings. Thus no differences in procedure occurred at the beginning or end of the expedition.

#### **7.9. GENERAL COMMENT.**

One of the problems of gathering data in wilderness regions and under natural conditions is the unpredictable nature of the environment and people's responses to it. This is particularly pertinent to the present study. A number of schools that undertook to be a part of the investigation could not be included in the final sample because they were unable to complete the requirements of the study due to adverse weather conditions, insufficient time, variation of programme and so on. Also groups and individual responses cards were omitted from the final sample if their responses were not completely satisfactory. Certain safeguard criteria were built into the questions and card(s) to ensure that climbers were careful and accurate in their completion of the card. Any cards found with irregularities were discarded. The built-in safeguards for proper completion were as follows:

1. Instead of a number response a letter was required.
2. Two responses cells were to remain blank.
3. The cards were scrutinised for patterning of responses [e.g. 1 2 3 3 2 1 etc.]

Cards were discarded a) if two or more of the responses in 1 and 2 were completed incorrectly, b) if deliberate patterns of responses were found. Any one occurrence of the above criteria meant that all of that climber's cards for each stage were carefully scrutinised.

## **7.10. PILOTING OF METHOD AND PROCEDURE.**

- 1.a) Local teachers and experts in outdoor education were asked to read through and give comments and suggestions in the light of their experience.
- b) Local school children were asked to complete the cards.

2. Full scale mountain expeditions (3 groups) in North Wales Snowdonia region followed the procedure closely and were also encouraged to discuss any problems, highlight difficulties and give suggestions as appropriate.

From these three groups used in the pilot investigations corrections and changes were made to obtain the final format. Areas of procedure where extra care was needed by the teachers/leaders were also identified: for example the procedure at the centre needed much more planning than at first envisaged, viz:

- a). Coordination and timing of group meetings were complicated by groups having domestic duties to complete before commencing the preparation for the day. e.g. cleaning kitchen duties.
- b) Transport and travel arrangements with groups was a particular problem that needed careful monitoring. Groups did not go on the same routes at the same times so that transport was required to take them to the starting point and as there were only two minibuses, groups had to share transport.
- c) Careful reading and familiarization with the questionnaire schedule were found necessary, and teachers/leaders were asked to read through more thoroughly and to be aware of the changing situations.
- d) Awareness of practical difficulties from the environment, (rain, wind, snow, cold ruggedness of terrain etc.) was needed so that suitable places to complete the questionnaire were found.

e) Getting every member of the group together at the setting out stage and the return was not easy and needed some foresight of the difficulty.

These potential weaknesses were highlighted both at the school briefing and the centre briefing.

**7.11.1. Request to Instructors.** The text can be found in Appendix 5.

**7.11.2. Procedure for collecting data.** Details of data collection can also be found in Appendix 5.

**7.11.3. Video recording of specimen climbs:** Appendix 5 gives details for any reader wishing to obtain a copy of this video tape.

## **7.12. ANALYSIS AND MODELLING OF THE DATA.**

The design of the study represents individuals in groups in terms of various instructor-rated variables (age, experience and so on) then plots their responses to questions over the expedition. Thus a time base is built into the design, and the link between current and predicted estimates can be trr the whole climb, as can the varying role of the classifying or instructor-rated variables at each stage. In addition the climbers' own ratings at each stage are entered into the analysis to explore any causal links between stages. However the nature of the enquiry indicated less concern for the proportioning of variance and more for the simple demonstration of pathways. Such a design which seeks correlation and causal linkages among repeated measures over time is ideally suited for some form of multiple regression analysis to identify pathways through the data. It should be noted that such use of multiple regression techniques is more heuristic than strictly explanatory. The chosen procedure uses stepwise selection of independent variables while the beta coefficient is used to determine the significant variables from that selection.

### **1.6. HYPOTHESES.**

The hypotheses have been cast within a series of research questions each representing a component of the overall research problem. These questions and hypotheses are as follows:

1. What stability and change exists in climbers' assessments over the course of the climb?

a) climbers' will show increasing coherence over the climb

in their view of themselves, of the group and of the environmental conditions.

- b) the intensity or perceived importance of incentive and risk acceptance of the ratings will increase as the climb develops.
- c) differences will be found throughout the climb between perceived group ratings and self ratings.
- d) climbers' perception of the group in relation to incentive, risk and situational factors will change with the developing climb.

2. Is there differentiation according to instructor ratings?

- a) biographical variables such as gender, age, school type will show no significant differentiation of climbers' self-assessments.
- b) personal attributes (instructor-ratings) of experience, ability, fitness and commitment will be significant discriminators of the climbers' self-assessments.
- c) group status, instructors' prior ratings of route difficulty and weather conditions will again be reflected in climber self-assessments.
- d) instructor-ratings (explanatory variables) will have varying influence on climbers' group viewpoint across the climb.

3. Can climbers predict Incentive, Risk, and Situational factors later in the climb?

- a) climbers' predictive ability will be poor.
- b) climbers' physical estimates will be more consistent than psychological estimates.
- c) group predictive ability will be less consistent than individual predictive ability.

4. What limits climbers' predictive ability?

- a) some limitations will be imposed on predictive ability of climbers by methodological constraints.

#### 7.14. SUMMARY OF DESIGN.

INSTRUCTOR RATED VARIABLES		DEPENDENT VARIABLES.							
		Setting Out		En Route		Summit		Return	
		Act.	Pred.	Act.	Pred.	Act.	Pred.	Act.	Pred.
		In. Gp.	In. Gp.	In. Gp.	In. Gp.	In. Gp.	In. Gp.	In.Gp.	In.Gp.
GENDER		<div>INCENTIVE</div> <div>RISK ACCEPTANCE</div> <div>SITUATIONAL FACTORS</div>							
AGE RANGE									
ABILITY									
EXPERIENCE									
FITNESS									
RISK LEVEL									
COMMITMENT									
GP. STATUS									
GP. EXPERIENCE									
SCHOOL TYPE									
ROUTE DIFFICULTY									
WEATHER CONDITION									

Key:    Act. = Actual ratings  
           Pred. = Predictive ratings.  
           In. = Individual or self ratings  
           Gp. = Group ratings

# **CHAPTER EIGHT.**

## **RESULTS 1: CLIMBERS' SELF APPRAISALS.**

### **8.0 INTRODUCTION.**

In this chapter the presentation of self-appraisal ratings is combined with preliminary comments in order better to guide the reader through the pattern of data. A similar block of data relating to how climbers perceive their group over the climb will be presented in summary form in Chapter 9.

The results have been cast as a series of research questions which represent the components of the overall research problem. These are as follows:

1. What stability and change exists in climbers' self assessments over the course of the climb?
2. Is there differentiation of climbers' self-assessments according to Instructor ratings?
3. Can climbers predict Incentive, Risk, and Situational factors later in the climb?
4. What limits climbers' predictive ability for their own self-assessments?

### **8.1 STABILITY AND CHANGE IN CLIMBERS' SELF ASSESSMENTS OVER THE COURSE OF THE CLIMB.**

Two kinds of data are presented here: first trends in mean ratings over the course of the climb, and second the regression links among these same sequential measures.

#### **8.1.1. TRENDS IN MEAN RATINGS.**

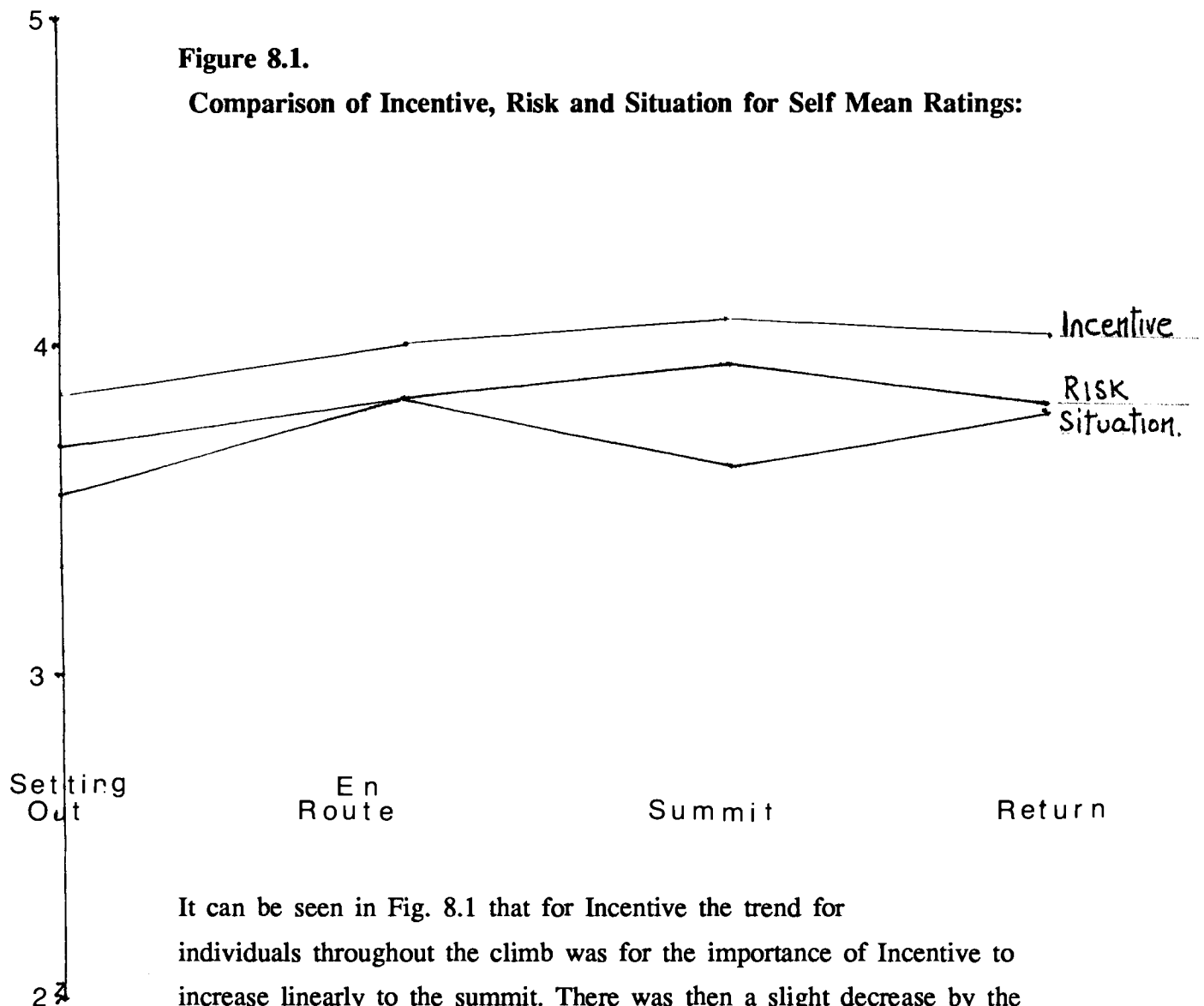
To give an instant overview of the general picture the mean level trends over the climb are presented descriptively in Figure 8.1.



This is followed by detailed appraisals of constituent graphs for each component question for Incentive, Risk and Situation cluster.

**Figure 8.1.**

**Comparison of Incentive, Risk and Situation for Self Mean Ratings:**



It can be seen in Fig. 8.1 that for Incentive the trend for individuals throughout the climb was for the importance of Incentive to increase linearly to the summit. There was then a slight decrease by the Return stage.

Risk ratings, too, gradually increase as the climb progressed, again dipping after the top had been reached. This indicates that risk tolerance increases up to the summit.

The Situation graph shows no similar trend. One would expect the Situational graph to be responsive to specific changes in the weather and variation of the terrain itself. This could then well interact with the changing physical condition of each person but lead to no obvious trend.

## **1) CONSTITUENT ITEMS FOR INCENTIVE.**

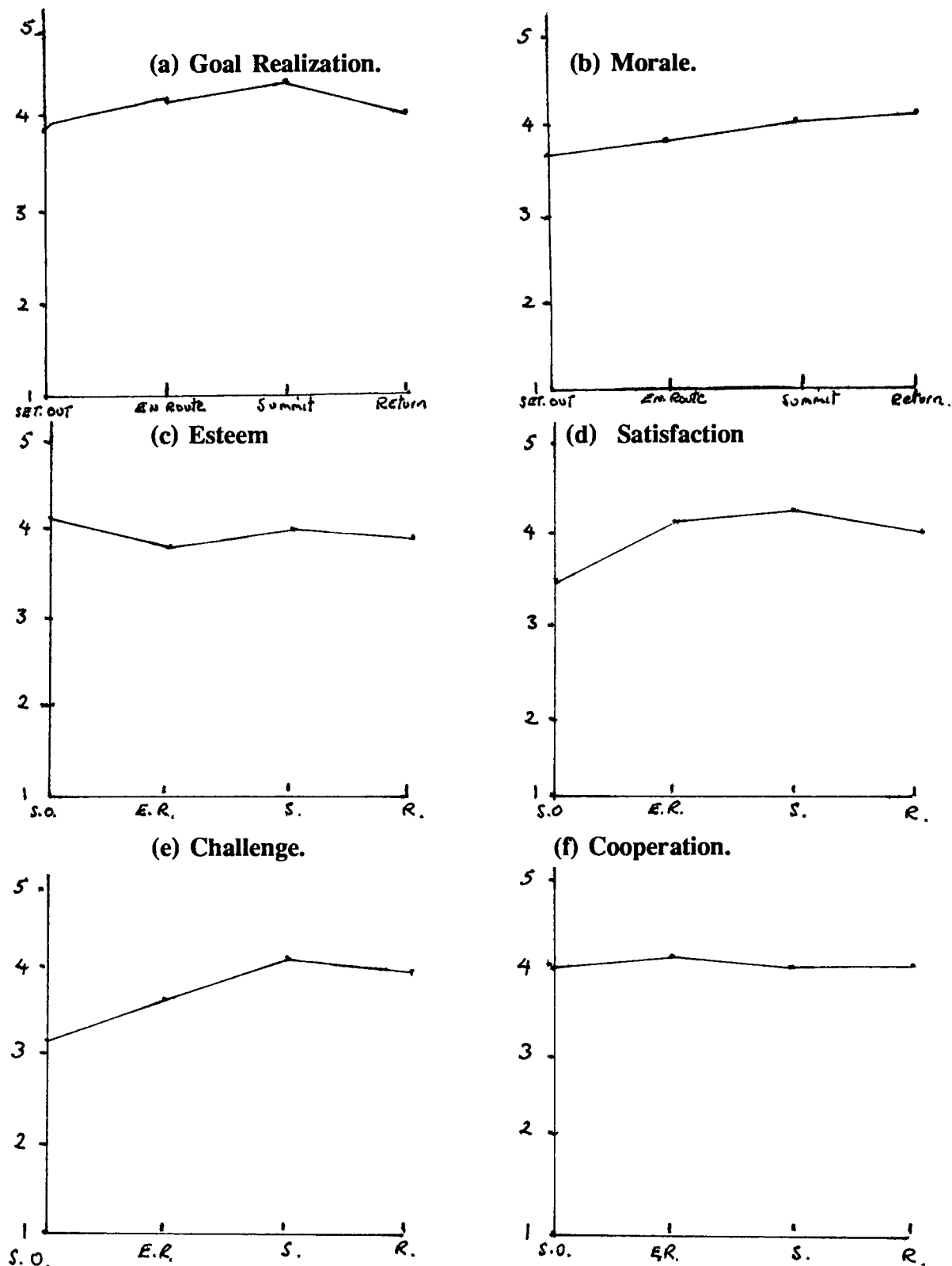
The questions climbers answered for example for setting out were as follows ('actual' or current versions):

- 1a How important is it to achieve your goal?.
- 2a Assess the level of your morale.
- 3a How challenging is this expedition?
- 4a How satisfied are you with the expedition so far?
- 5a Assess your feelings of self esteem.
- 6a Assess how cooperative you have been so far within the group.

As noted earlier, there were minor variations in wording e.g. verb tense at each stage in order to maintain relevance. Every attempt was made to preserve the essential meaning and no significant variation, in the event was evident.

The graphs of means for goal realisation, morale, esteem and satisfaction show an increase in strength/importance from starting out to summit, with some suggestion of downturn on return to basecamp. The remaining two items, challenge and cooperation remain uniformly high throughout the climb.

**FIGURE 8.2    DIAGRAMMATIC OVERVIEW FOR SELF RATING LEVELS OVER THE CLIMB FOR COMPONENTS OF THE INCENTIVE FACTOR.**



## 2) CONSTITUENT ITEMS FOR RISK.

It will be recalled that the "Risk" label encompasses the following items: Confidence, Willingness to Accept Risk, Support, Mishap Tolerance, Sense of Control, and Uncertainty. The actual or current questions climbers answered for example at setting out were as follows:

7a How confident are you in your own ability and efficiency?.

8a How willing are you now to accept risk?

9a How supportive do you think you have been so far to the rest of the group?

10a If a minor accident were to occur about half an hour into the expedition, how willing would you be to continue the expedition?

11a How important is it for you to be in control of yourself and the situation?

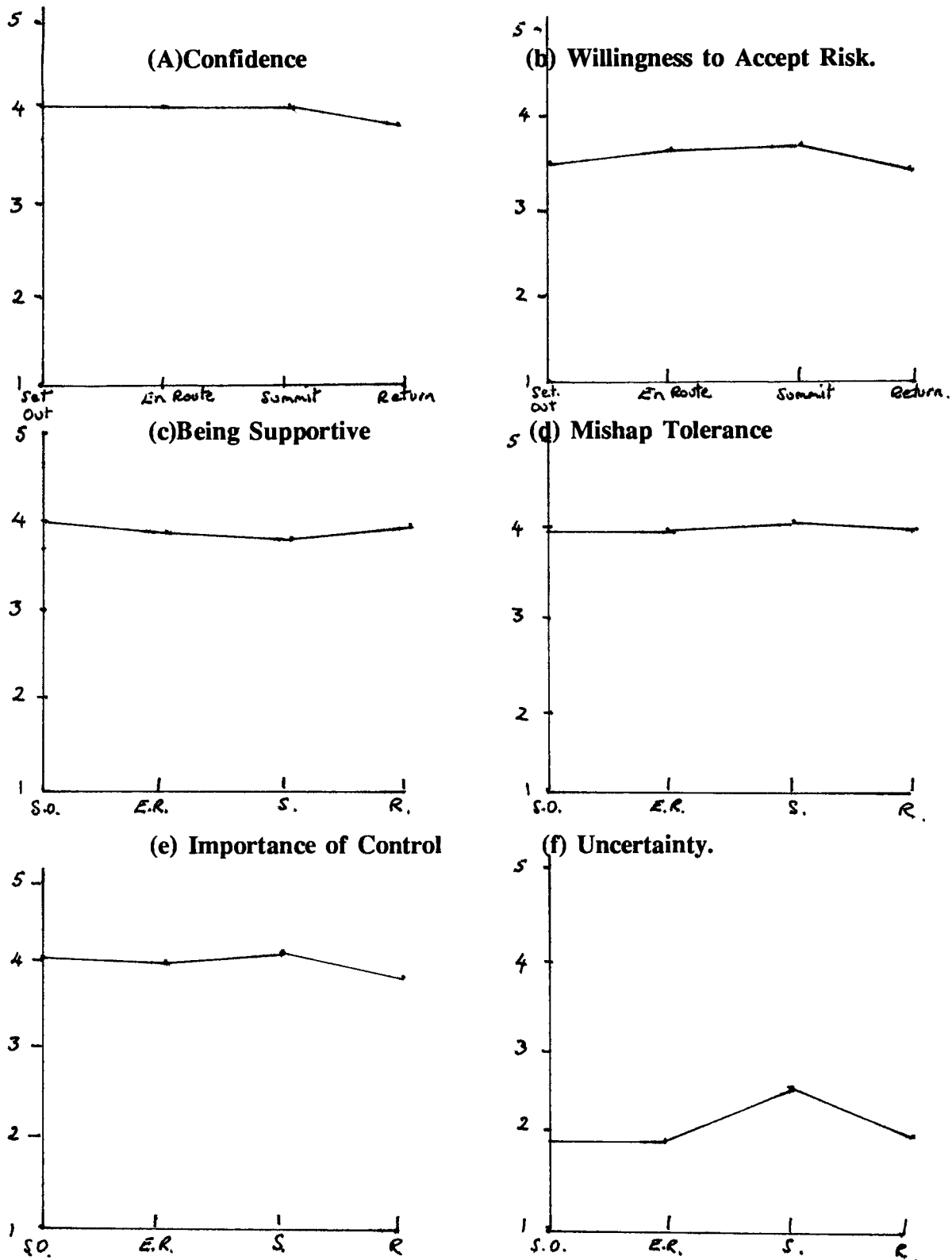
15a Assess your uncertainty now as to the outcome of the climb.

Figure 8.3 shows that the measures grouped together under Risk maintain a steady uniform trend over the climb, although felt confidence shows some slight rise up to en route then falls over the rest of climb. The importance of control is given especially high ratings, whereas uncertainty <sup>1</sup> was given exceptionally low ratings.

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<sup>1</sup> The researcher omitted the question of uncertainty on the summit because in most cases the goal of the climb was to reach the summit obviously in doing so no uncertainty existed any longer.

**FIGURE 8.3 DIAGRAMMATIC OVERVIEW OF SELF RATING LEVELS OVER THE CLIMB FOR COMPONENTS OF THE RISK FACTOR.**



### 3) CONSTITUENT ITEMS FOR SITUATION.

The actual questions climbers answered for example at setting out were as follows:

12a Assess your present physical condition.

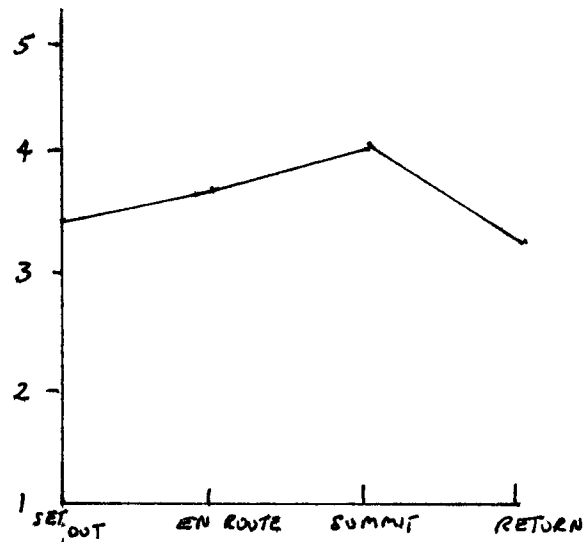
13a Assess the level of difficulty of the route.

14a Assess the weather conditions.

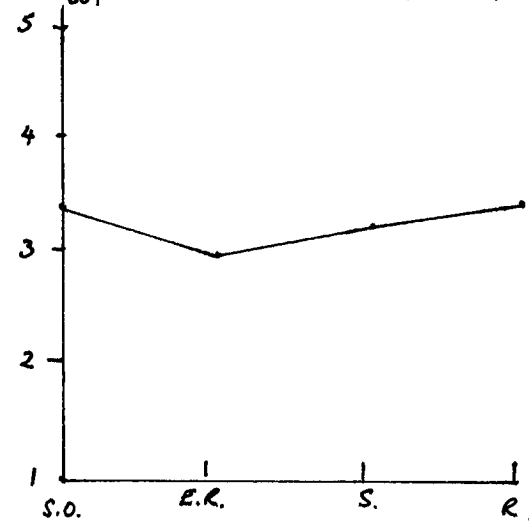
Figure 8.4 shows how the measures grouped together under Situation vary over the climb. It can be seen that climbers rate their physical condition progressively higher from starting out through the first break and to the summit. The rating then drops sharply to below that of starting out for the final retrospective assessment on return to base. One would expect the climbers' physical condition to deteriorate due to fatigue as the summit is approached, but they construe it as improving, with fatigue being allowed to intervene only once the summit has been achieved and the climber returns to base. This indicates that the motivational force of the climber mobilises physical resources to achieve success but when the motivational force declines then so does physical condition but more dramatically. This is an important inference because from the en route stage onwards the route difficulty increased and the weather conditions became similarly worse especially by the summit. This is not unusual as mountain tops are inhospitable places being often windy and cold, due to the height climbed and the fact that the chill factor on the climber makes even a light breeze feel cold. The retrospective assessment would be at the end of the day as well as at the end of the climb so one would hardly expect the assessment to be an improvement on the midday levels.

**FIGURE 8.4. TRENDS OVER THE CLIMB FOR COMPONENTS OF THE SITUATION FACTOR.**

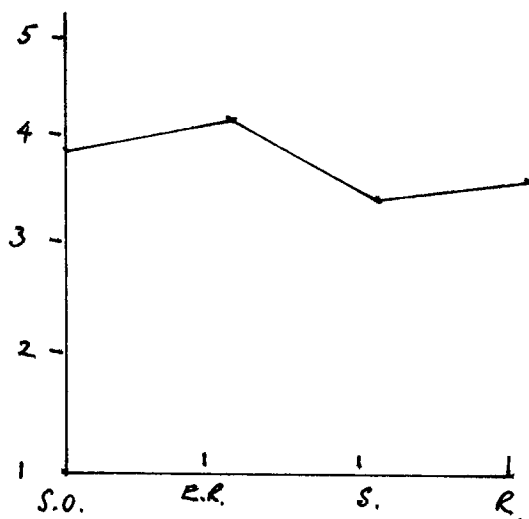
**a) Physical Condition.**



**(b) Route Difficulty.**



**(c) Weather Conditions**



### 8.1.2. REGRESSION LINKS BETWEEN STAGES OF THE CLIMB. INTRODUCTION.

The previous section dealt with the question of " how much" - how confident or cooperative or physically fit, and so on, climbers felt at each stage of the climb. The present section complements this by examining the relationship or similarity between self assessments at one stage and the next. Expressed in terms of a causal argument, it is wished to examine the extent to which answers to questions at any given stage can be seen as influenced by earlier related ratings. The task is thus to determine which variables (answers to questions) remain stable or change as the climb progresses. It must be remembered throughout this analysis that some degree of correlation in the repeated measure is to be expected, because it is the very same people at both stages.

The preferred approach is regression rather than correlation because regression better embodies the idea of amount of change in answers relative to the previous answers given. Moreover, if these previous answers are to have some non-arbitrary and indeed causal role in the conceptual model, then an argument from regression coefficients is better equipped to accommodate this.

#### A) INCENTIVE.

Figure 8.5. Incentive links across the climb.

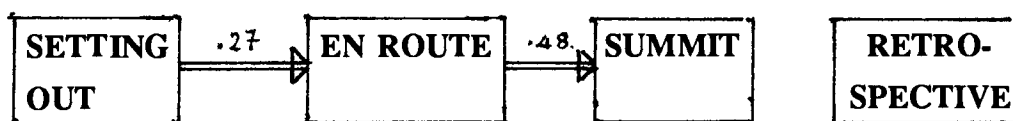


Figure 8.5 shows the coefficients obtained when each stage was sequentially regressed through the developing climb, (stage 2 was regressed on stage 1 ; stage 3 on 1 and 2; stage 4 on 1, 2, 3.) It can be seen that the climbers' responses for the six incentive items up to the summit produced significant links with previous stages. Table 8.1a shows the significant beta coefficients found; for completeness, B, its standard



error, partial correlation and the T statistic are also given. (In general, however, the argument will be based on beta coefficients). Significant link was found between En Route and Setting Out with a beta coefficient of  $b = .27$  and between Summit and En Route,  $b = .48$ . However, no significant link was found between Return (Retrospective) responses and Summit responses as taken some 2 or 3 hours earlier.

We deal first with links between Setting Out and En Route levels of Incentive.

**Table 8.1a Influence of Incentive at Starting Out on Incentive En Route**

	B	SE B	Beta	Part Cor	T
Setting Out	.281	.127	.271	.170	2.214

**Table 8.2a Influence of En Route Incentive on Incentive at Summit.**

	B	SE B	Beta	Part Cor	T
En Route	.346	.065	.476	.459	5.326

#### **1) Links between Setting Out and En Route.**

The beta coefficient of .27 shows that the responses made at the onset of the expedition still had an effect on the incentive of the individual at the second stage. We can extend this analysis by moving from Incentive answers as a whole and asking the question again in terms of answers to each of the six questionnaire items that constituted Incentive. The research question being addressed then becomes one of the specific best points of contact between a climber's total Incentive level at the beginning of the climb and the constituents of Incentive at the next stage. Put differently, we are saying, given that there is a significant link between the two stages of the climb, which specific questions at the earlier stage best predict (researcher's perspective) the later total Incentive level.

Moreover this degree of data breakdown is manageable and proves to be worthwhile. What is not being attempted here is a total regression analysis for every individual item at every stage which would give rise to a data picture of unmanageable complexity.

Table 8.1b shows that the locus of effect was wide with four of the six

items having significant involvement.

**Table 8.1b. Breakdown Analysis for Incentive Scores En Route.**  
Component Items of Incentives.

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem.	Coopera- tion.
SETTING OUT	.33			-.21	.32	.34

The influence of Goal Realization ( $b = .33$ ) at this stage is to be expected, but one would not have seen Being Cooperative ( $b = .34$ ) as influential so early in the climb. Self esteem  $b = .32$  and Satisfaction ( $b = -.21$ ) were deemed influential too. However, the level of Morale and Challenge had no significant link, although one would have thought that both items would have been of influence especially when starting out.

## 2) The link between summit measures and the previous measures.

The En Route stage was found to link significantly with the Summit stage,  $\beta = .48$ . This indicates that there was a positive relationship between climbers' judgements about the incentive factors made en route and those made at the summit stage. The progressive nature of the decisions and responses is evident in that by this time Setting Out stage had no significant influence. Table 8.2b show that the consistent incentive links during this phase of the climb were found to be Cooperation ( $\beta = .38$ ) and Goal Realization ( $\beta = .25$ ) One would expect some change in emphasis between the stages, especially with the challenge gone or considerably reduced and the degree of uncertainty curtailed.

**Table 8.2b. Breakdown Analysis of Incentive Scores for Summit.**

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem.	Coopera- tion.
EN ROUTE	.25					.38

## 3) The link between retrospective and previous measures.

There were no significant climber-rated-variable links with this stage from either the Summit or earlier stages. Perhaps one would not

expect the responses of the climbers at the base camp to reflect their feelings and attitude while on the summit.

### **SUMMARY**

The sequential links of the stages of the climb indicate a thread of continuity in climbers' evaluative judgements about the incentives that influenced them while on the climb.

These findings show for incentives, that the stable loci of effect for the majority of the climb were cooperation and goal realization.

Satisfaction in achieving the goal and maintaining Self Esteem however, were incentive items that did not carry through to the summit, Morale and the Level of Challenge remained uninfluential throughout. One would have thought that the morale of the group would have been an important ingredient in successfully achieving the goal especially where group interaction was important. This seems not to be the case here.

## B) RISK ACCEPTANCE.

We continue the analysis by examining how the climbers' risk responses varied over the climb.

The same model for presenting the results is again followed.

**Figure 8.6. Risk Acceptance links across the climb.**

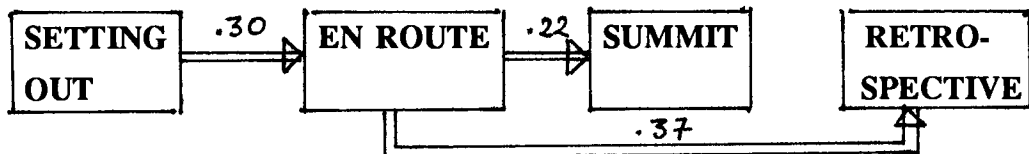


Figure 8.6 shows how the various climber-rated variables for risk enter the explanatory picture through regression analysis. From Table 8.6. it can be seen that significant links were found between Setting Out stage and En Route ( $b = .30$ ); En Route and Summit ( $b = .22$ ); and unexpectedly En Route and Return stage ( $b = .37$ ). However, no significant link was found between Summit and Return stage.

**Table 8.3a. Risk scores at 'En Route'**

	B	SE B	Beta	Part Cor	T
RISK SET.OUT.	.300	.102	.295	.271	2.931

**Table 8.4a. Risk Appraisal Scores at the Summit.**

	B	SE B	Beta	Part Cor	T
EN ROUTE	.219	.098	.217	.210	2.237

**Table 8.5a. Return Risk Appraisal Scores.**

	B	SE B	Beta	Part Cor	T
EN ROUTE	.310	.074	.374	.360	4.186

### 1) Links between En Route responses and Setting Out responses.

We develop the analysis by examining links between answers provided at the first stop, En Route, with answers obtained at the base camp before setting out. The significant coefficient of .30 (.295) shows that the climbers' risk responses at the beginning of the climb do relate to risk responses at stage 2: En Route.

From the breakdown matrix where the climber's response for Risk

acceptance En Route is regressed on the six Risk questions at Setting Out (Table 8.3b.), the main link between the two stages is found to be via Confidence in Ability and Mishap Tolerance.

**Table 8.3b. Breakdown Analysis for Risk Scores at En Route.**

	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
RISK SET.OUT	.30			.36		

**(i) Confidence.**

As at the beginning of the climb, Confidence in ability and efficiency to cope with the rigorous climb was again found to be a locus of effect. Thus the greater the overall risk acceptance scores at the outset the greater the En Route confidence, ( $b = .30$ )

**(ii) Mishap Tolerance.**

Degree of overall risk acceptance at Setting Out goes with degree of Tolerance of Mishap route ( $b = .36$ ). Note however, that earlier Willingness to Accept Risk does not significantly relate to the subsequent Risk acceptance, nor does feeling of Uncertainty. In summary here, the estimating power for Risk acceptance once the climb is well under way is mainly contained in expressed Confidence and Tolerance of Mishap at starting.

**2) Links between Summit responses and previous stages.**

As Table 8.4a shows there was a significant link between climbers' responses at the Summit and En Route ( $b = .22$ .), although the only risk factor highlighted (Table 8.4b) was (Willingness to Accept Risk) ( $b = .27$ ).

**Table 8.4b. Breakdown Analysis Risk Appraisal Scores at the Summit.**

	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
EN ROUTE		.27				

**i) Willingness to accept Risk. (.27)**

It seems that as the climb progresses the climbers' responses do change quantitatively - confidence is no longer influential, while Willingness to Accept Risk has taken over from Mishap Tolerance. Support, Need for Control and Feeling of Uncertainty have remained consistently of no effect throughout the climb.

**3) Links between responses at Return to base camp and previous stage responses.**

**Table 8.5b. Breakdown Analysis Return Risk Appraisal Scores.**

	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
EN ROUTE		.37			.32	

The significant coefficient of .37 (Fig. 8.8) shows that the climbers' responses were influenced not by responses given at the summit but by the previous 'en route' stage. To some extent the hypothesis that important decisions about the route and the likelihood of success are made during this phase of the climb is upheld by this significant link.

It seems then, that the climbers' willingness to accept risk ( $b=.37$ ) was influenced by the 'en route' ratings link, although in addition the climbers' sense of Control ( $b=.32$ ) was of effect. This is particularly interesting because a sense of Control was not influential in the en route to summit link. This indicates that some change has occurred in the climbers' responses since returning to the base camp. The risk factors of Support and Uncertainty remained uninfluential once again as did Confidence.

## **SUMMARY OF STABILITY AND CHANGE DURING THE CLIMB.**

The indication from these risk results is that the climber's successive evaluations do have threads of continuity with significant links being found between setting out stage and en route stage; en route and return stage. However, as far as the climbers' component questions were concerned links varied across the climb. Confidence and Mishap Tolerance were two links found only at the beginning of the climb while being in Control was significantly linked only at the end of the climb. The climbers' willingness to accept the risk during the climb was consistently affected by both the en route and summit stages. The component risk factors of being Supportive and being Uncertain were of non-affect throughout the climb. These findings seem to be indicating that the risk acceptance factors during the climb were generally stable with minor changes occurring with the developing climb.

### **C) SITUATIONAL FACTORS.**

How the climber's perception of situational factors varied over the climb was also examined. The items that constitute the Situation cluster were:

12a Assess your present physical condition.

13a Assess the level of difficulty of the route.

14a Assess the weather conditions.

The same model for presenting the results is followed as for all analyses. Figure 8.7 shows how climber-rated variables for situation enter the explanatory picture through regression analysis.

**Figure 8.7. Situational factors across the climb.**



It can be seen that very little similarity was found across the climb with the only significant link ( $b = .21$ .) occurring in the early part of the climb between En Route and Setting Out responses.

**Table 8.6a Situation Scores at 'En Route'**

	B	SE B	Beta	Part Cor	T
SET.OUT ACTUAL.	.245	.115	.214	.199	2.109

### 1) Links between En Route and Setting Out.

Table 8.6b follows the same practice of giving a breakdown analysis

**Table 8.6b. Breakdown Analysis for Situation Scores at Setting Out.**  
Component Situational Factors.

	Physical Cond.	Route Difficulty.	Weather Cond.
SET. OUT	.34		

The breakdown analysis in Table 8.6b indicates that the locus of effect resides in Physical Condition, ( $b = .34$ ). This shows in the early part of the climb that the climbers' physical condition was the only changeable factor, which means that the route difficulty and weather condition responses were stable throughout the climb.

As there were no Actual Significant Climber-rated variable links for the summit ratings nor for Return ratings no further analysis was possible. The lack of links between stages points to variables (ratings to the questions) changing as the situations change or as the climb develops. This variability is consistent with the idea that climbers evaluate their situation (conditions) as the climb progresses.



## **8.2. DIFFERENTIATION OF CLIMBERS' SELF-ASSESSMENT ACCORDING TO INSTRUCTOR RATINGS.**

### **8.2.1. RESULTS FOR INCENTIVE**

#### **General Comment:**

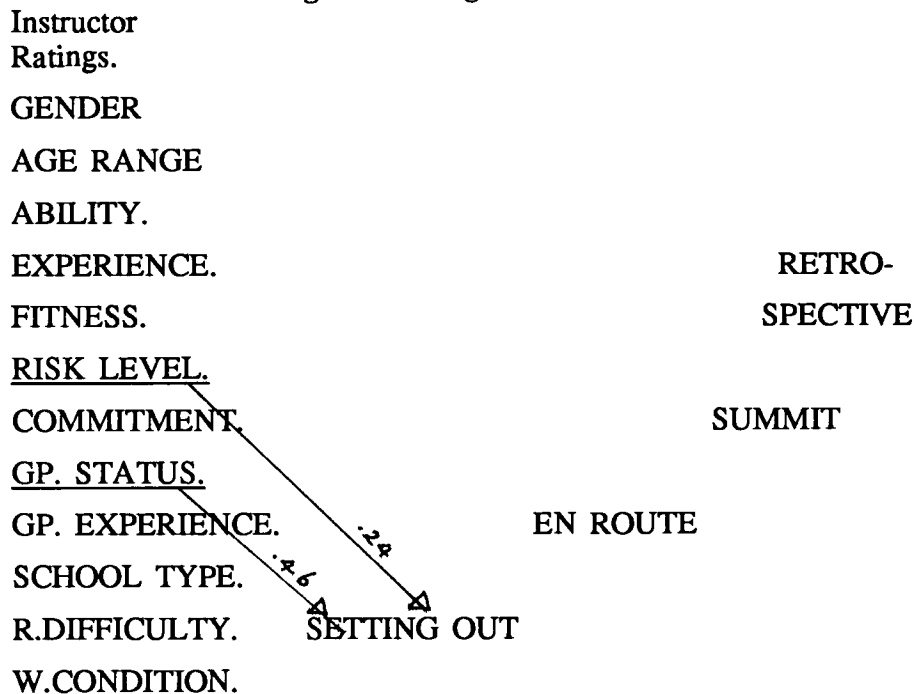
During the expedition planning phase discussion about goals and aspirations will have taken place with instructors. Both instructor and climbers will have had an opportunity to get to know the competence and confidence of most individuals in their group. The structure of the group will have taken shape and most of the early norms established. The question of interest is: How do the instructor-rated explanatory variables relate to the climber's incentives as the climb develops? The questionnaire of course provides information on how the climber's incentives vary over the climb. It will be recalled that the items encompassing the Incentive label were: Goal realization, ("How important is it to achieve your goals?"); Morale, ("Assess the level of your morale now?"); Challenge, ("How challenging is this expedition?"); Satisfaction, ("How satisfied are you with the expedition?"); Esteem, ("Assess your feelings of self esteem") and Cooperation, ("Assess how cooperative you have been within the group".)

The same model for presenting the results is continued. Thus, we begin with the answers provided at the base camp before setting out. From a practical standpoint, we are trying to estimate how successfully an instructor can bring to bear particular kinds of knowledge about climbers. This would allow the instructor to anticipate what difficulties may be expected with what kinds of group members and at what stage of the climb. It is therefore a research question of both interest and importance.

## 1. SELF RATINGS FOR INCENTIVES AT STARTING OUT.

Figure 8.8. shows the results of regressing climbers' self ratings on instructor ratings to determine where significant predictive links exist.

**Figure 8.8. Incentives: Links between Instructor Ratings and Climbers' Self Ratings at Setting Out.**



On the left hand side of Figure 8.8. the explanatory variables (instructor ratings) are listed. The term instructor rating is used loosely since some of the classification e.g. gender, type of school are matters of fact, while others such as riskiness, commitment will require a true subjective assessment from the instructor. Only the significant regression pathways are shown (in black) together with the corresponding beta coefficients (in red). The diagonal represents the four assessments (stages) made during the climb, from starting out to return. As results are presented for each stage of the climb, previous regression pathways will also be included, so that a cumulative picture can develop.

Table 8.7a. gives the additional statistics for the two significant instructor-rated variables in Figure 8.8..

**Table 8.7a. Incentive: Additional Statistics for Significant Instructor Variables at 'Setting Out'**

	B	SE B	Beta	Part Cor	T
GROUP STATUS.	3.695	.646	.463	.463	5.723
RISK LEVEL.	1.487	.527	.242	.228	2.819

**a) Groups with or without a leader differ on Incentive Self- ratings.**

By far the biggest influence on this stage of the expedition was the explanatory variable Group Status, that is whether the group were accompanied by an adult leader or not ( $b = .46$ ). This significant finding shows that differences exist between being in a led or unled group and summative level of Incentive over the six constituent items. It is therefore informative to break down the analysis into the links between 'group status' and each of these items. In this way the causal interface can be more precisely identified.

**Table 8.7b Breakdown Analysis: Incentive Scores at Setting Out.**  
Component Items of Incentive.

Goal-   Morale Realization		Challenge	Satis- faction	Esteem.	Coopera- tion.
GROUP STATUS	.46			.28	
RISK LEVEL	.45				

**i) Morale ( $b = .46$ )**

What this result means is that the major specific consequence of being in a led or unled group was on one's morale. Climbers with a leader had higher morale. It is well known that a good leader inspires an increased anticipation of success, and it therefore makes sense that the accompanied group set out with a higher level of morale than the unaccompanied.

**ii) Esteem ( $b = .28$ )**

The significant coefficient  $b = .28$ , shows that groups led by an adult leader also had higher self esteem at the commencement of the climb than unled groups.

**b) Risk Level ( $b = .24$ )**

The second instructor's rating that was significant, was the instructor's assessment of how risky-cautious the climber had appeared prior to the climb ( $b = .24$ ). The specific causal link is again morale: those who were seen as more willing to take risks emerge as having higher morale at starting out. Thus at setting out the only incentive item that really enters the explanatory picture is morale. Again equally clearly the climber's risk level was having no significant impact on goal realisation, challenge, satisfaction esteem or cooperation.

**c) Non Significant Discriminators.**

At setting out neither gender, age, group experience, type of school, ability, fitness, route difficulty, commitment nor weather conditions significantly differentiated individual climbers. For any individual or group to evaluate their situation effectively and safely one would expect that the level of experience would influence their judgement considerably. But this does not seem to be the case at the onset of the expedition. One could speculate on reasons why it does not feature as a significant influence. The first suggested reason is that both the unaccompanied and accompanied groups have behind their judgements experienced leaders and advisors. During the planning stage they probably utilized their experience and knowledge to sort out their route. However even here 'group status' had no significant impact on goal realisation, challenge, satisfaction or cooperation. The second reason to some extent follows on from this utilization of experience because if the group have assistance to match their experience with the corresponding level of route difficulty then experience is in effect neutralised. The importance of being experienced is knowing what you can realistically achieve without encountering too dangerous a situation. The difficulty level is set when

the route is chosen. Of course, even with this matching a level of uncertainty always exists when one ventures into the mountains as one never knows exactly what will occur. Nevertheless, the effect on the data of this matching will be to underrepresent the importance of experience.

## 2. SELF RATINGS FOR INCENTIVES EN ROUTE.

Figure 8.9. shows how instructor prior ratings of individual climbers relate to climbers' incentive self-ratings on arrival at the first stop in the climb - En Route.

In Figure 8.9. significant coefficients are again indicated in red numbers alongside significant pathways: the "en route" pathways are shown in red, and the already presented results for "setting out" in black.

**Figure 8.9. Incentives: Links between Instructor Ratings and Climbers' Self Ratings at En Route.**

Instructor  
Ratings.

GENDER

AGE RANGE

ABILITY.

EXPERIENCE.

FITNESS.

RISK LEVEL.

COMMITMENT.

GP. STATUS.

GP. EXPERIENCE.

SCHOOL TYPE.

R.DIFFICULTY.

W.CONDITION.

RETRO-  
SPECTIVE

SUMMIT

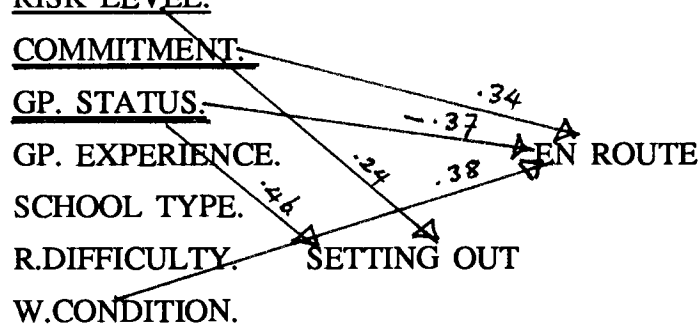


Table 8.8a. gives the additional statistics for the three significant instructor-rated variables in Figure 8.9.

**Table 8.8a. Incentive: Additional Statistics for Significant Instructor Variables at En Route.**

	B	SE B	Beta	Part Cor	T
COMMITMENT.	1.837	.492	.339	.287	3.737
W.CONDITIONS.	2.419	.618	.377	.301	3.915
GROUP STATUS	-2.875	.894	-.369	-.247	-3.217

**Table 8.8b. Breakdown Analysis for Incentive Scores at En Route.**  
Component Items of Incentives.

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem.	Coopera- tion.
COMMIT- MENT.		.37				.30
WEATHER CONDITIONS	.40					
GROUP STATUS	.30					

**a) Level of Commitment relates to morale and cooperation.**

At the first stop the instructor's assessment of the climbers' level of commitment is found to discriminate, as shown by the significant beta coefficient of .34; the higher the assessed commitment the stronger the incentive. From the breakdown analysis, morale was again found to be the main significant link, with cooperation a strong secondary link. Thus the prior commitment of the climber significantly affected morale and cooperation, but had no impact on goal realisation, challenge, satisfaction or esteem. One would expect in any mountain group, especially while in operation that a high level of commitment would be necessary for climbers to ensure success, and that this would have had some effect on the challenge or even satisfaction and esteem of the climber. However, the findings show that the greater the prior commitment of the climber, the greater the level of reported morale and cooperation. Certainly one would feel, that without a high level of commitment, the morale of the group would indeed be low. This is further emphasised by the finding that the higher the commitment the greater the sensed need for cooperation

### **b) Weather conditions affect incentive**

The significant finding of  $b = .38$  indicates that weather conditions affect incentives. Certainly one of the biggest uncertainties in British mountains is the state of the weather especially in the Lake District, Wales and Scotland. Accordingly, as much of the data was gathered from groups working in the Snowdonia National Park Region this to some extent is not a surprising finding. However, from the breakdown analysis, the climber's Goal Realization was found to be the locus of effect. Here we find that the weather conditions strongly influenced the incentive of achieving the goal: the better the weather the stronger the sense of goal realization ( $b = .40$ ) This seems an understandable finding given the crucial nature of the weather conditions to the success of the climb. As Muston (1986) puts it:

"The weather seems fine and everyone is lightly equipped for a pleasant walk in the hills. But an unpredictable climate and a party ill equipped to cope with the worst can be a recipe for disaster.....Is there such a thing as acceptable risk?"

However, the weather conditions did not influence the morale, satisfaction, esteem of the climber nor the cooperation, or the challenge of the climb. This would seem understandable if the climbers had experienced reasonable weather conditions during this stage but if adverse weather conditions had been found then certainly one would not expect such a finding.

### **c) Climbers' with or without a leader differ on incentives**

How a climber views the progress being made at this stage all depends on whether an adult leader is present or not, as the significant coefficient of  $-.37$  demonstrates. Those without an adult leader scored more highly on the incentives scales than groups with an adult leader. However, the breakdown analysis shows in Table 8.8b, that the locus of effect resides

only in the goal realization item,  $b = .30$  indicating that those climbers' without an adult leader had a higher goal realization rating. However, because no other item was found significant meant there were no differences between led and unled climbers as far as the other incentives were concerned. From the evidence above En Route stage seems important in the development of the individual's incentives and evaluation processes.

**d) Non-significant discriminators.**

This stage is dominated by a number of influences which one would hypothesis to be of greater importance than those thought previously to be discriminators of climbers' attributes, e.g. ability, experience and fitness. One would have thought that the ability of the climber and his climbing experience would have been major discriminators particularly at this stage. Similarly one might have thought in view of the considerable amount of energy that has been expended to get to this stage, that a person's fitness might have some influence on their responses.

We may infer that once en route physical factors are weak discriminators of differences among climbers' incentive levels and that the main differentiations are psychological, as described.

**3. CLIMBERS' RATINGS OF INCENTIVES AT THE SUMMIT.**

We now turn to how ratings actually turned out on the summit. This phase represents the achieving of the major goal or objective; in many cases this was the actual climbing of a major peak and standing at the highest point.

Figure 8.10. again shows through regression analysis how various instructor-rated variables enter the explanatory picture. The summit results are shown in grey, and the already presented results for en route in red and for setting out in black.



**Figure 8.10. Incentives: Links between Instructor Ratings and Climbers' Self Ratings at Summit.**

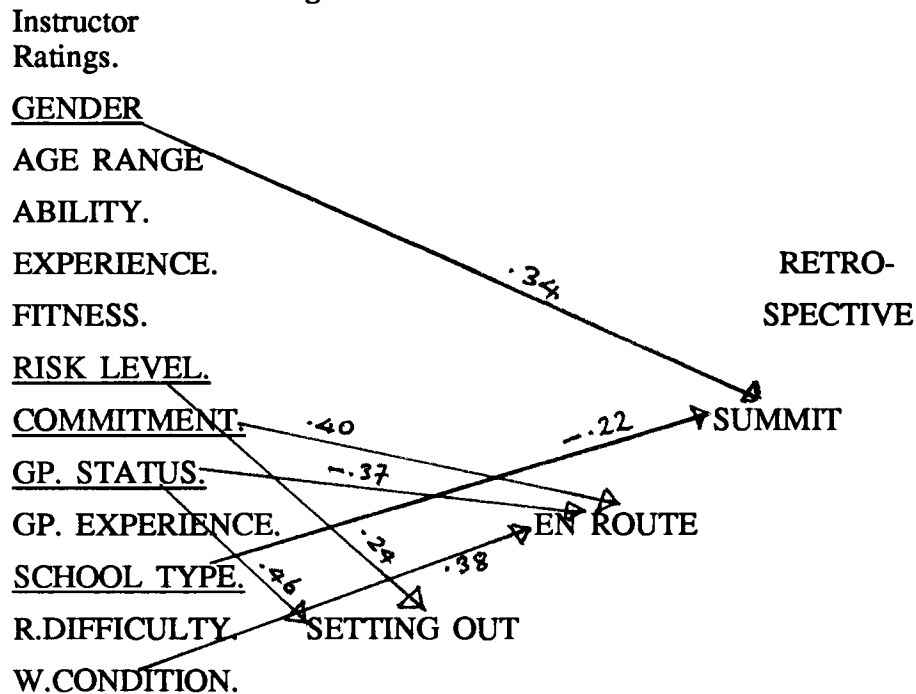


Table 8.9a gives the additional statistics for the two significant instructor-rated variables in Figure 8.10.

**Table 8.9a. Incentive: Additional Statistics for Significant Instructor Variables at Summit.**

	B	SE B	Beta	Part Cor	T
GENDER	2.229	.693	.335	.277	3.218
SCHOOL TYPE	-1.243	-.590	-.224	-.181	-2.107

**Table 8.9b Breakdown Analysis of Incentive Scores on the Summit**  
Component Items of Incentives

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem	Coopera- tion.
GENDER		N	1	L		
SCHOOL TYPE		-.28	.32			

**a) Gender differences in Incentives.**

A significant differentiator from the instructor-rated explanatory variables was gender with  $b = .34$ . It seems that the boys' incentive ratings are greater than the girls at the summit i.e. boys have a stronger sense of incentive. From the breakdown analysis no specific item had any significant influence, so that the result needs to be read as a small difference distributed fairly evenly over items.

**b) Grammar and secondary school pupils differ on incentives.**

This is an explanatory variable that played no role at any other stage of the climb and is therefore not given great theoretical significance. The significant finding of  $b = -.22$  shows, that secondary school climbers' had higher incentive scores at the summit than grammar school climbers. The breakdown analysis showed that the differences between secondary school climbers and grammar school climbers at this stage lay in the incentive items of **Challenge** ( $b = .32$ ) and **Morale** ( $b = -.28$ ). (Table 8.9b)

**4) CLIMBERS' RATINGS OF INCENTIVES RETROSPECTIVE TO THE CLIMB.**

We now see how ratings turned out when the climbers returned to base camp. Differentiation in instructor-ratings at this stage should reflect the overall success and failure of the climb as far as the individual is concerned. There has been sufficient time for reflection on how things went and how well the individual performed. Incentives and expectations will have been realised along with any feelings of a sense of achievement and satisfaction. Figure 8.11. once more shows how various instructor-rated variables enter the explanatory picture through regression analysis. The single return or retrospective significant pathway is shown in green, and the already presented results for the summit in grey, en route in red and setting out in black.

**Figure 8.11. Incentives: Links between Instructor Ratings and Climbers' Self Ratings at Basecamp.**

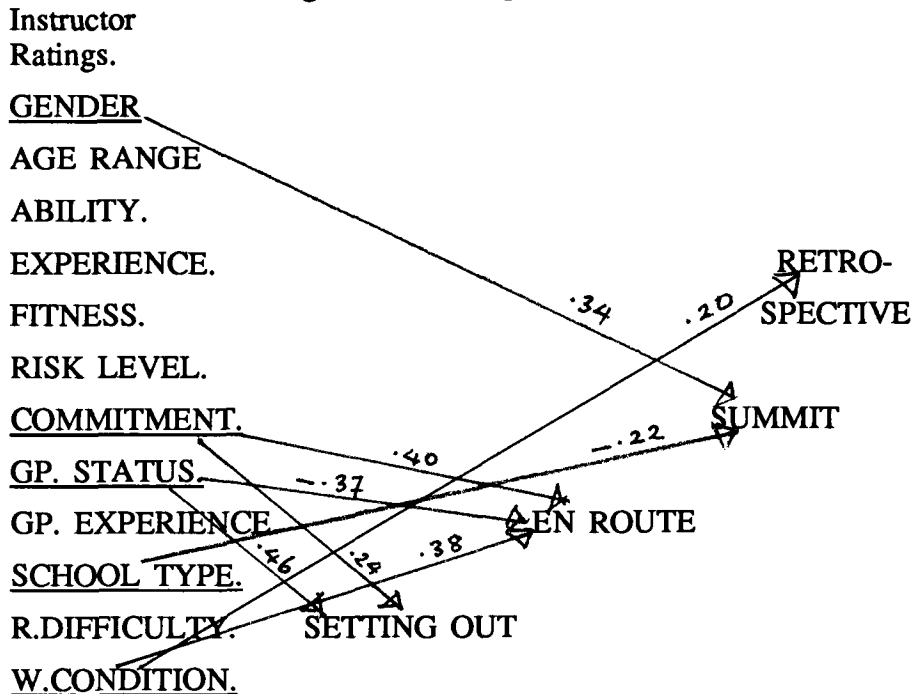


Table 8.10a gives the additional statistics for the only significant instructor-rated variables in Figure 8.11. As can be seen, the only significant result from the instructor-rated explanatory variables was Weather Conditions ( $b=.20$ ).

**Table 8.10a Incentive Scores at the Basecamp.**

	B	SE B	Beta	Part Cor	T
WEATHER COND.	1.056	.499	.196	.196	2.119

**Table 8.10b. Breakdown Analysis of Incentive Scores at the Basecamp.**  
 Component Items of Incentives.

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem	Coopera- tion.
WEATHER CONDITIONS	.37		-.20	.29		-.23

### **Weather conditions had different effects on climbers' incentives.**

Thus, although ratings are being made at the base camp when the climb is over the only influential explanatory variable is the instructor's estimate of weather conditions. From the breakdown analysis a number of specific incentive items were targeted. Thus the better the weather conditions the greater the importance of goal realization, the less cooperative, the greater the satisfaction and the less the feeling that the climb was a challenge - an interesting mix.

#### **i) Goal realization.(b =.37)**

Here the better the weather conditions the greater the importance to the climber of achieving his goal, indicating that a climber does not have to battle against adverse weather conditions to establish a creditable goal.

#### **ii) Satisfaction. (b =.29)**

The more favourable the conditions the greater the satisfaction with the climb. It seems that the climber's satisfaction with the climb is governed by the weather conditions too.

#### **iii) Cooperation. (b = -.23)**

Here the negative coefficient indicates that with good weather conditions climbers' are less cooperative with other climbers. This seems acceptable because the need to cooperate with other climbers really only becomes important when adverse conditions threaten the success of the climb.

#### **iv) Challenge (b = -.20)**

A point made earlier was that the weather conditions also affect challenge aspects of the climb. Here the finding, which seems intuitively correct, shows that in good weather conditions the climber feels that the climb is less challenging.

### **SUMMARY: Incentive levels over the climb as a whole.**

While the "en route" stage from this analysis proved to be an especially important one, each stage reflected the development of the expedition and the varying evaluative demands placed on the individual.

Evidence has shown that individuals do differ in the way they evaluate aspects of incentive. The effect was developmental with the felt incentives of the climber increasing in importance as the climb progressed. Commitment and weather conditions were significantly important during the climb at a number of stages. There were some differences between gender and schools shown at the summit stage. However, the most noticeable feature throughout is the dominant effect of group status, that is whether the group were accompanied by an adult leader or not. It is obvious from this section of the study that the two groups view the adventure differently in a number of ways.

### **8.2.2. RESULTS FOR RISK ACCEPTANCE.**

#### **1. Self ratings for risk acceptance at setting out.**

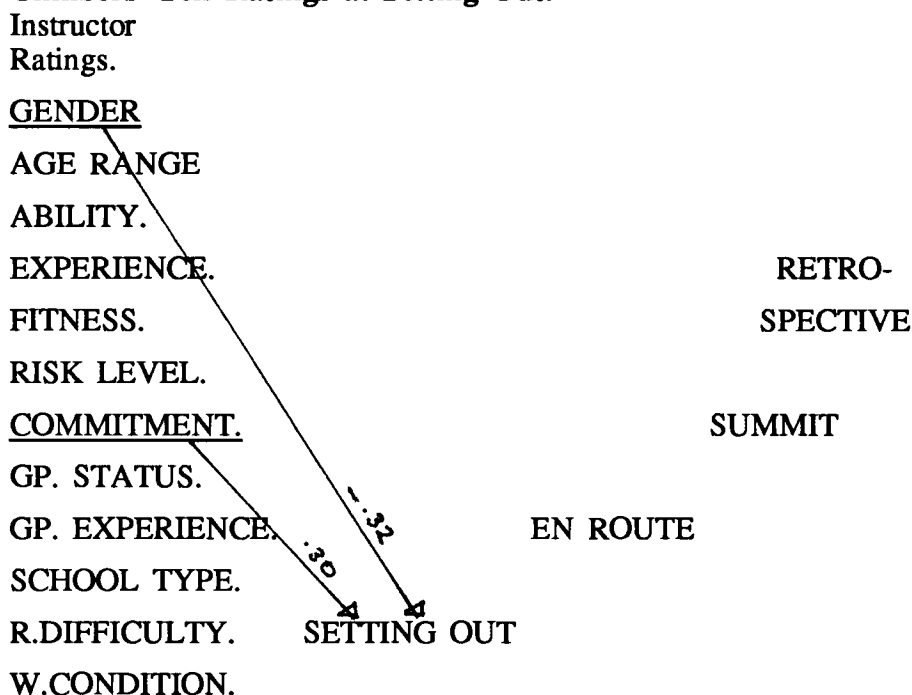
In addition to the Incentive data already presented, the questionnaire provided information on how the climber's sense of risk varied over the climb. It will be recalled that the "Risk" label loosely encompasses the following items: Confidence, ( How confident are you in your own ability and efficiency?); Willingness to Accept Risk, (How willing are you to accept risk?); Support, (How supportive do you think you are to the rest of the group?); Mishap Tolerance, (How willing would you be to continue the expedition if a minor accident were to occur?); Sense of Control, (How important is it for you to be in control of yourself and the situation?) and Uncertainty, (Assess your uncertainty to the outcomes of the climb.)

The same model is followed for presenting the results. Thus, we begin with the answers provided at the base camp just before setting out.

Figure 8.12 shows through regression analysis how various instructor-rated variables enter the explanatory picture, while Table 8.11a.

gives the additional statistics for the two significant instructor-rated variables in Figure 8.12.

**Figure 8.12. Risk Acceptance : Links between Instructor Ratings and Climbers' Self Ratings at Setting Out.**



**Table 8.11a. Risk Acceptance: Additional Statistics for Significant Instructor Variables at 'Setting Out'**

	B	SE B	Beta	Part Cor	T
GENDER	-2.197	.628	-.321	-.33	-3.496
COMMITMENT	1.206	.373	.297	.297	3.236

The two instructor-assessed variables found to be of significant influence at the beginning of the climb were Gender, (b.=.32) and Commitment, (b.=.30).

As for the analysis of Incentive, each significant explanatory variable was examined separately to find out where the loci of effect lay in the six constituent questions. The respective significant coefficients are shown in Table 8.11b.

**Table 8.11b. Breakdown Analysis for Risk Acceptance Scores at setting out.**

Component Items of Risk.					
	Confi- dence.	Will to Accept R.	Support	Mishap Tolerance	Control. Uncert- ainty.
GENDER	-.38				
COMMITMENT				.35	

**a) Gender is related to confidence at setting out.**

Figure 8.12 indicates that at the start of the climb the evaluation of risk by boys and girls was significantly different, ( $b=-.32$ ), and from the item breakdown (Table 8.11b) the locus of effect for gender was found to be confidence. The negative coefficient of  $-.38$  indicates that the girls were less confident than the boys.

No real research evidence exists concerning male and female differences in risk taking in a mountaineering context, although Higbee (1972) indicates that males are generally more prone to high risk taking, as evidenced for example in traffic convictions. However, there are no available studies to show that a positive relationship exists between such daily life risk taking and the sport context though Hayes (1980) feels it is reasonable to assume that some link exists.

**b) Commitment relates to confidence and to perceived mishap tolerance.**

From the breakdown analysis for the individual's sense of Commitment (Table 8.11b) two significant links were revealed, with felt confidence ( $b=.28$ ) and with willingness to continue and Tolerate Mishap ( $b=.35$ ).

**(i) Confidence.**

The greater the climber's identified commitment level the greater that climber's confidence at setting out. In other words, the climber gains some extra confidence impetus from a greater commitment to the climb.

## **(ii) Tolerance of Mishap**

The stronger the sense of commitment identified by the instructor the greater the willingness to continue, even if a minor accident did occur. Thus Commitment links to Confidence and to willingness to push on in spite of mishap. This makes a great deal of sense and does not need further "explaining".

## **c) Non Significant Instructor Ratings at Setting Out.**

Uncertainty may also increase as the climb progresses. However, what might need some explanation or at least comment, is why the other four items are not being significantly triggered. Perhaps Support and a Sense of Control are two items that need to develop over the climb before differentiation can emerge. The main point for comment here is that the instructor's assigned rating for "willingness to take risk" has no significant explanatory value for the climber's self-rating on risk acceptance at starting out. This is remarkable since the two variables appear to offer such a close conceptual fit.

Further, neither weather nor route difficulty seems to matter.

As with the Incentive results, ability, fitness and individual experience have no significance influence on the risk ratings. In the case of risk one might have expected ability and experience even at this initial stage to have been influential. But, consistently, having a leader or not had no influence either.

One must guard against moving to a general picture of "weak effects" by remembering that these are data for how climbers actually felt at starting out: how the picture developed for the later stages of the climb must now be examined.

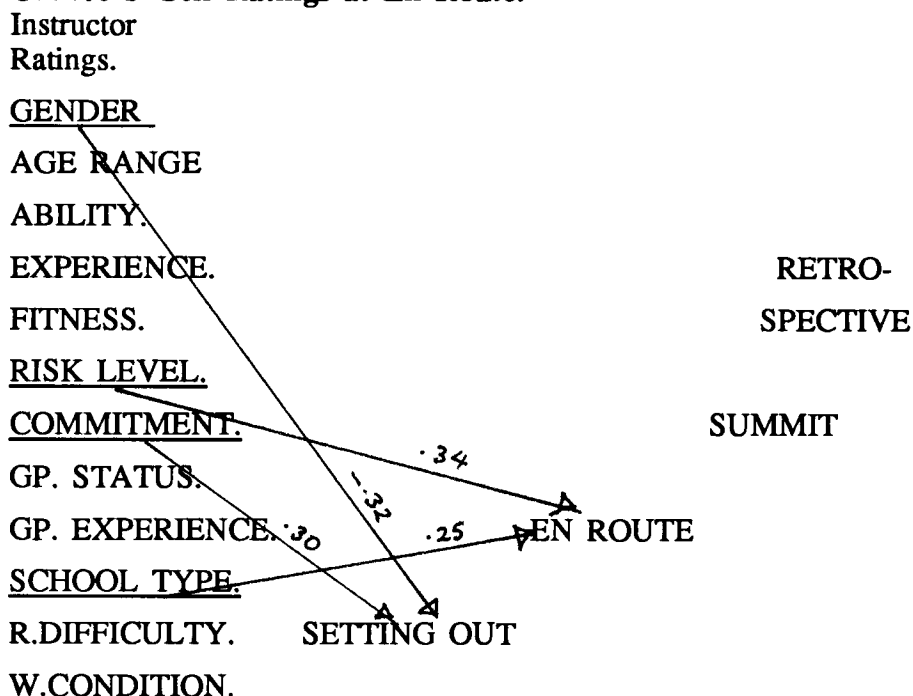


## 2. CLIMBER RATINGS FOR RISK ACCEPTANCE AT EN ROUTE.

In this section we examine the climber ratings at the next stage of the climb ( En Route') and see how well they could be explained by instructor assessments made a day or more earlier. En Route' responses, were obtained at the first stop after a significant amount of the climb had been completed, normally in the region of two hours.

Figure 8.13 shows how instructor ratings of the individual climbers' background related to the climbers' own ratings of risk acceptance at the time of the first stop in the climb. In Figure 8.13 these "en route" results are shown in red, and the already presented results for setting out in black. The significant beta coefficients are indicated in red numbers.

**Figure 8.13. Risk Acceptance : Links between Instructor Ratings and Climbers' Self Ratings at En Route.**



At the first stop the main significant instructor variable is how risky-cautious the climber is Risk Level,  $b=.34$ , and the secondary influential variable of interest is the Type of School attended,  $b=.25$ .

Table 8.12a. gives the additional statistics for the two significant instructor-rated variables in Figure 8.13.

**Table 8.12a. Risk Acceptance: Additional Statistics for Significant Instructor Variables at 'Setting Out'**

	B	SE B	Beta	Part Cor	T
RISK LEVEL.	1.639	.493	.340	.307	3.322
SCHOOL TYPE	1.431	.611	.247	.216	2.341

**Table 8.12b. Breakdown Analysis for Risk Acceptance Scores at En Route.**

Components of Risk factor.					
	Confidence.	Will to Support	Mishap Tolerance	Control.	Uncertainty.
RISK LEVEL	.32	.26			-.24
SCHOOL TYPE				-.22	

**a) Risk Level (b = .34)**

The instructor's assessment of the climber's willingness to take risk, was not influential at setting out but now enters the explanatory picture en route.

**(i) Confidence (b = .32).**

The greater the instructor's assessment of the climber's willingness to take risk, then the greater the climber's en route confidence in his ability and efficiency.

**(ii) Support (b = .26).**

The greater the instructor's original assessment of the climber's willingness to take risk, then the greater the climber's en route perceived feeling of ability to give support to the group. In other words the higher risk-accepting climber also shows he realises that if a demanding climb is to be successful then he must be supportive to other members of the group.

**(iii) Uncertainty (b = -.24).**

The greater the instructor's original assessment of the climber's willingness to take risk, then the less the sense of uncertainty the climber has en route.

**b) Grammar and Secondary-Modern pupils differ on risk.**

This again was an explanatory variable that played no role at starting out. The significant finding of  $b = .25$  shows, that grammar school pupils were showing higher risk acceptance scores en route. The item breakdown indicated that the locus of effect resided in two constituents, a sense of control and uncertainty.

**(i) Sense of Control ( $b = -.22$ ).**

Grammar school children believed it was less important to have a sense of control than did secondary modern pupils during the en route phase.

**(ii) Uncertainty ( $b = .26$ ).**

Again grammar school pupils appear, from this finding, to be more uncertain of the outcome of their climb, than secondary modern pupils.

It has to be noted here, however that there is no particular theory' to account for this School effect, and the finding proved to be an isolated observation ; no parallel occurrences were found in the Risk data at other stages of the climb.

**c) Non-significant discriminators.**

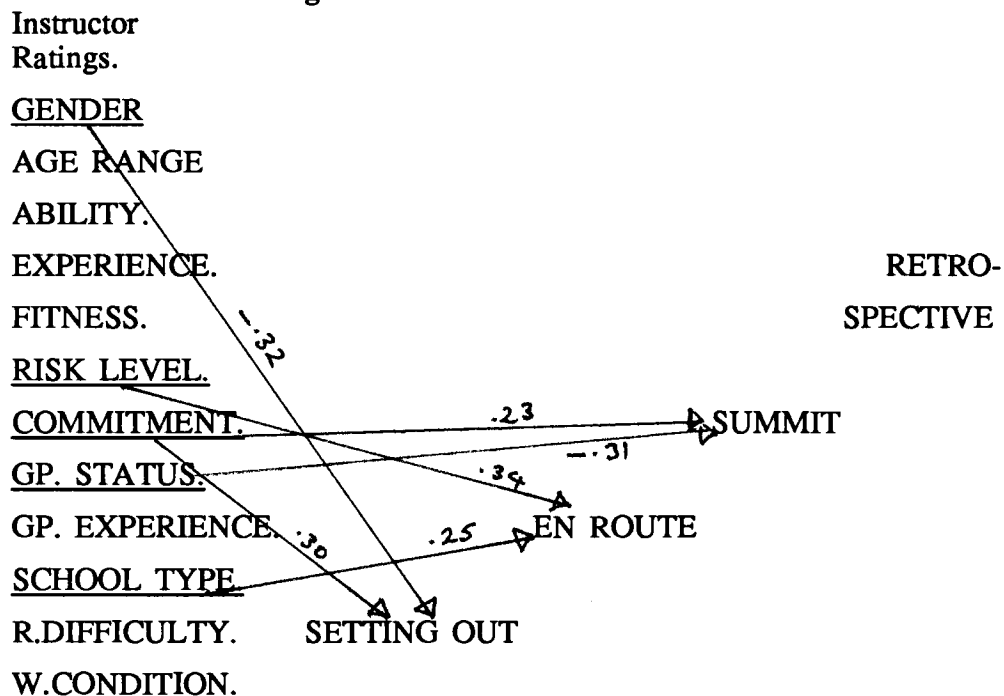
Experience, ability and fitness of the individual were seemingly of little influence en route. Certainly one would have expected at least one of these explanatory variables to have played a part in the risk acceptance of the climber. Perhaps their fitness and ability was not under any pressure and therefore seemed to be of no consequence, while their experience was well matched with their selected goal and did not come under consideration as an influence.

### 3) PERCEPTION OF RISK APPRAISAL AT THE SUMMIT.

This phase represents the achieving of the major goal or objective. As noted before, in many cases this will be the actual climbing of a major peak and standing at the summit.

Figure 8.14 shows how instructor ratings of individual climbers related to climbers' ratings on risk acceptance. The Summit results are shown in grey, and the already presented results for setting out in black, and en route in red. Beta coefficients for all significant explanatory variables are shown in red.

**Figure. 8.14. Risk Acceptance : Links between Instructor Ratings and Climbers' Self Ratings at Summit.**



It can be seen that group status, ( $b = -.28$ ) is the main influential instructor assessed variable at this stage with commitment, ( $b = .23$ ) a further influence. Table 8.13a gives the additional statistics for the two significant instructor-rated variables in Figure 8.14.

**Table 8.13a Risk Acceptance: Additional Statistics for Significant Instructor Variables at the Summit.**

	B	SE B	Beta	Part Cor	T
GROUP STATUS	-1.820	.603	-.305	-.284	-3.020
COMMITMENT	.971	.430	.234	.212	2.258

**Table 8.13b Breakdown Analysis: Risk Appraisal Scores at the Summit.**

Components of Risk factor.						
	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
GROUP STATUS.			.22			— .61
COMMITMENT.			.40			

**a) Groups with and without an adult leader differ on risk.**

The negative coefficient indicates that Groups unaccompanied by an adult leader feel more certain about the outcome of the climb and more able to be supportive to the group)

**i) Uncertainty. (b = -.61)**

In keeping with the overall results, it seems that climbers without an adult leader are less uncertain about the outcome of the climb than those with a recognized leader. It is conceivable that since the unaccompanied groups found the climb was developing as they themselves had planned much of the uncertainty, would no longer exist, especially now that the goal had been achieved.

**ii) Support. (b =.22).**

At the Summit differences were found between led and unled groups in respect of supportive influence. Those climbing without an adult leader rated themselves more supportive than climbers with an adult leader. We may reasonably infer that the unaccompanied groups were more aware of the need to share the responsibility for the group's welfare, when no experienced adult was to hand.

**b) Climber commitment level relates to risk appraisal ( $b = .23$ ).**

The climber's level of commitment was also found to have an affect on the climbers risk acceptance.

**i) Support ( $b = .40$ )**

Here, the finding shows that the greater the instructor's rating of commitment to the climb, the greater the climber's perception of being supportive to the group.

**c) Non-Significant Discriminator.**

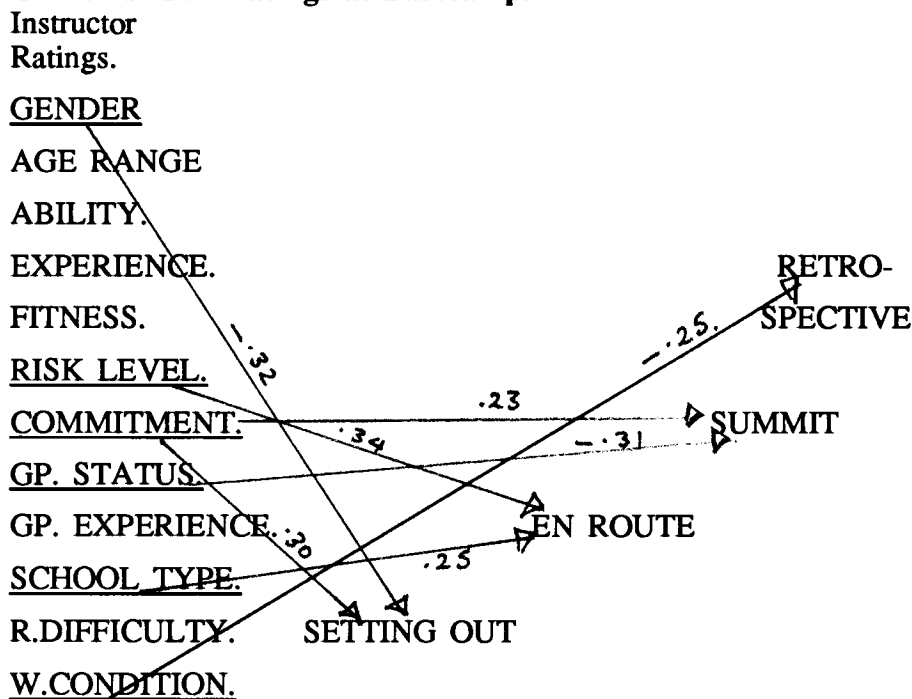
Instructor's ratings of ability, fitness and experience once again had no influence on the risk ratings. One would have thought that if these ratings were at all representative of true status they might have shown some association by the time the climb was well under way. However, their absence from the explanatory picture is consistent, and remains so at the next stage.

#### (4) CLIMBERS' RETROSPECTIVE APPRAISALS OVER THE CLIMB AS A WHOLE.

In this section we examine the climbers' actual ratings retrospective to the climb and again see how well they could be explained by the prior instructor ratings.

Figure 8.15 shows how instructor ratings of individual climbers related to climbers' ratings of risk acceptance by the time they reached the base camp. Retrospective results are shown in green, and the already presented results for setting out in black, en route in red, and summit in grey.

**Figure. 8.15. Risk Acceptance : Links between Instructor Ratings and Climbers' Self Ratings at Basecamp.**



As Figure 8.15 shows the only helpful instructor-rated variable at this final stage explaining the climbers' risk acceptance was the instructors assessment of weather conditions. Table 8.14a gives the additional statistics for this significant instructor-rated variable in Figure 8.15.

**Table 8.14a. Risk Acceptance: Additional Statistics for Significant Instructor Variables at Basecamp.**

	B	SE B	Beta	Part Cor	T
WEATHER CONDS.	-1.012	.349	-.251	-.249	-2.898

**Table 8.14b. Breakdown Analysis Retrospective Risk Appraisal Scores.**

Components of Risk Factor						
	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
WEATHER CONDITIONS			.21	-.33		-.41

**a) Differing weather conditions influence the climbers' risk acceptance.**

It is generally understood by laymen and climbers, and upheld here, that the weather conditions will have a marked effect on a climber's risk acceptance level. However, little is known as to what underlying factors of risk are affected by the changing weather conditions. Clarification came from the breakdown analysis pinpointing three loci of effect; uncertainty, mishap tolerance and being supportive.

**i) Uncertainty (b = -.41)**

The worse the weather conditions forecast by the instructor the less uncertainty a climber had about the outcome of the climb. This is not an obvious finding as one would expect that bad weather would cast more doubts on the success of the climb.

**ii) Mishap Tolerance (b = -.33).**

However, in this case the worse the weather conditions the less willing the climber is to continue the climb if a minor accident occurred. This is very much to be expected as mishaps are more likely to escalate in inclement weather thus making the climb potentially more dangerous.

**iii) Support (b = .21).**

It can be seen here that the poorer the weather conditions the greater the climbers realise the need to be supportive towards each other. This shows the climber's grasp of the situation, because climbers can



easily find themselves under increasing pressure both mentally and physically to cope with the rigours of the climb, especially in adverse weather conditions. Thus the climber can see that by supporting other members in poor weather conditions, the climb can become more achievable.

**b) Non-Significant Discriminators.**

As the individual reflects on the expedition from the comfort of the centre these retrospective ratings are again not influenced by experience, ability, or fitness. In fact, other than weather, none of the instructor-rated variables was a discriminator.

**B. SUMMARY OF RISK ACCEPTANCE**

This section of the study examined the at-the-time risk ratings of the individual during the climb. It seems from these findings that only a few background influences have any effect on risk acceptance, although ratings at all stages revealed discrimination through at least one instructor-rated variable. Commitment, was common to more than one stage, namely to setting out and the summit, while Gender (at setting out), risk level and type of school attended (en route) were of influence at a single stage. On the summit the level of commitment and presence of a leader differentiated the climbers, while at the base camp (retrospective) only the assessed weather conditions were influential.

The differences in risk acceptance that occurred between boys and girls at the onset of the climb could be anticipated to some extent in a mixed group but no further differences were found as the climb progressed. However, once the climb was under way differences between grammar school climbers and secondary modern school climbers were found, although no theory to account for it comes to mind. Age and group differences appear to have no effect on risk acceptance. Nor indeed does experience, ability, fitness or route difficulty. One would have thought that because younger climbers on the whole would be less experienced and not so competent as older climbers that differences in risk acceptance would naturally exist, but this seems not to be the case.

In relation to the breakdown analysis one would expect confidence to be influential in the climbers' risk acceptance at the beginning of the climb, as indeed found here, and for climbers to be supportive with the developing climb, yet one might equally have felt that climbers' uncertainty of the outcome of the climb would occur at the onset rather than, as here, from the second stage onwards. Moreover, throughout the climb there was never any link between climber's willingness to accept risk and the instructor's prior assessment of risk acceptance.

### **8.2.3. RESULTS FOR SITUATIONAL FACTORS OVER THE CLIMB.**

#### **General Comment.**

In addition to Risk and Incentive, the conditions or Situation also warranted investigation because situational factors evidently contribute their own influence to the success or otherwise of the climb. In this section therefore, we are concerned with climbers' own perceptions of weather and other situational variables as they change over the climb. Most unusually, no instructor-rated variable entered the explanatory picture at any stage of the climb. It is noticeable that even the instructor's rating of weather and route difficulty did not relate to the climbers' own ratings on very similar items. This indicates that pre-climb, general-level assessments by even an experienced outsider can make no real contact with how climbers themselves experience conditions in situ.

#### **SUMMARY OF INFLUENCES.**

There was some evidence to show that individuals do evaluate their situation and on occasion with some accuracy. The effect was incremental with incentives and risk increasing with importance as the climb progressed. Weather conditions were significantly important during the climb on a number of stages but only in relation to incentives whereas commitment was particularly influential in risk acceptance and was also influential on climbers' incentives too. Gender and schools attended showed that some minor differences existed in incentives at the summit stage and early in the climb with risk acceptance. However, one of the most noticeable features throughout this analysis was the dominant effect of group status (that is whether the group was accompanied by an adult leader or not) particularly in relation to incentives. Clearly the two groups view the adventure differently in a number of ways.

The most unexpected findings of the study so far are as follows:

1. Certain explanatory variables failed to differentiate climbers' incentives, risk acceptance or situational appraisals anywhere on the climb. These inert variables were Experience, Ability, Fitness and Group Experience.

The interest in this finding lies in the fact that these variables are normally considered to have a major influence on climbers.

2. What is of further interest is that no background or instructor rated variable had any discriminatory value for the way different climbers might rate situational factors. Since these instructor variables (cf. Figure 8.14) include not only person-related but also situation-related items (route difficulty; weather conditions) these findings become especially remarkable and need further scrutiny.

### **8.3. CLIMBERS' PREDICTIONS OF INCENTIVE, RISK AND SITUATIONAL FACTORS FOR SUCCESSIVE STAGES OF THE CLIMB.**

#### **General Comment.**

The rationale behind this part of the results is that one mark of a good climber is ability to anticipate his or her status on key variables at later stages of an expedition. If so it then becomes useful to know what sorts of young climbers in terms of instructor classification seem better able to achieve this. However, a contrary view could be that unlike many realms of activity predictability is the very quality which defeats the object of an adventure. 'The attraction is the uncertainty' (Mortlock, 1984) or as Bonington (1982) says of his first mountaineering expedition into the Wicklow Hills, south of Dublin- 'Tentatively, I was stepping out into the unknown, had an awareness of danger-admittedly more imagined than real- and a love of the wild emptiness of the hills around me.' For him this was an adventure, even though it seems he fled when a great cumulus cloud threatened to engulf him. In Bonington's experience an important element of an adventure was the 'exploration of the unknown'.

However, this a false antithesis, because what one needs to remember is that what is an adventure for an expert could be a nightmare for a novice. As Mortlock (1984) points out, 'There is the problem of finding the appropriate stage for the experience of the person. Although one can decide approximately what that challenge should be, the outdoors cannot be regulated to suit the specific requirements of the individual.' Clearly if young climbers made successful macropredictions about the climb much of the edge would be taken off the adventure. However, on the whole these predictions are made by instructors and adventure organisers behind the scenes, casting the adventure at a level which would prove challenging but not beyond climbers' capabilities. This means that macropredictions, such as how young groups will be able to cope in wilderness regions where the terrain is rugged and the weather conditions

are often hostile and uncompromising, should not impinge on the climbers' own sense of uncertainty. The young climber is more concerned with micropredictions such as knowing 'that equipment is sound, that stamina will be sufficient and that various cues indicating particular kinds of terrain are recognised. However, whatever level of challenge one finds appropriate, one needs to be appropriately prepared for it, because the more adventurous one becomes, the greater the demands on skill, awareness, fitness, organising ability and more - including the team work necessary for a successful climb. The amount of equipment, manpower, organisation and planning needed to tackle a climb like Everest is tremendous. Against this, a local hike needs a minimum of equipment and much less planning, but is nevertheless as challenging an adventure for young novice climbers.

One might ask more generally, Why do people have to be concerned with the prediction of events? The simple answer is that success comes from being able to assess the situation, understand one's limitations, as well as those of the group, have an awareness of the possible problems, plan carefully and thoroughly, and more; all of these are gained from the experience of having done it before and consequently learning from past mistakes as well as successes. Planning then is important in a framework of safety (Mortlock, 1984) where the unpredictable nature of an often hostile environment is recognised and respected. Can the individual evaluate his situation? Is he able to draw comparisons from his experience and predict future consequences with any accuracy? Or is this an area where uncertainty exists and the incentive is derived from predicting a certain amount and discovering the rest? The distinction then between macropredictions and micropredictions becomes a matter of degree, experience and responsibility, where the maturing climber extends his decision-making from the micro into the macro. Although this transition will probably take many years to achieve it is one of the climber's ultimate goals.

Thus the young climber here is beginning the journey' from novice to seasoned mountaineer. This means that the climbers' projected responses should give an insight into how they perceive their

circumstances and how this changes as the expedition progresses. Any change of importance or influence should be reflected in their responses across the different points of the climb selected for analysis.

One must also remember at this stage that the climbers' judgments about people and situations will have been made from limited observations. Much of the physical and mental capacity of other group members to cope with this expedition is still to be confirmed along with their performance. Another uncertain element is just how well the group of individuals will function as a team. As they make their predictions their knowledge of the environment will be restricted to what they see at that moment in time as they gaze at the mountains or open country. Their low-level, acclimatizing climbs should also give them some awareness of what to expect but all the assessments at this moment in time are somewhat abstract and based on subjective evidence.

However, as the adventurers begin their expedition they will have set their goals, planned their routes, checked their equipment and prepared themselves physically and mentally i.e. they are building in the best degree of predictable certainty for these elements. Aspirations and predictions will be based on their past experience, discussion and the interaction they had with their companions as they prepared for the climb, along with help and advice from their instructors/ teachers or leaders.

### **8.3.1. PREDICTIONS FOR INCENTIVE.**

The predicted responses were always obtained after the immediate or "actual" responses had been taken. The questions asked the individual to look ahead to the next point on the climb, which would represent a significant part of the journey completed, and assess how they would feel and what would seem important to them. For instance, an example of the questions asked at the 'en route' stage was "Predict your level of morale as you near the summit? These predictions will be based partly on past climbs and partly on what the climber has experienced since setting out. Thus the climber will have had the contrasting experiences of physical

exertion, seeing the aesthetic beauty of the scenery as well as the remoteness, ruggedness and the vastness of the mountains, and the feeling of being isolated and alone. Here the reality of the challenge is immediate; there is nothing abstract or theoretical about these experiences. The awesomeness of the mountain towering above, seems to have a drama of its own. First hand information on how the weather and the face of the mountain can change so quickly, for instance is brought home to the climber. Few people can fail to be affected by such experiences.

Psychologically, through these experiences the climber will have gained a better knowledge of his own self-image and how the other members of the group have responded to him. Individuals' capabilities and levels of skill will have been assessed along with their willingness to cooperate and be an active part of the group. The climber can make comparisons of his own performance with those of other members of the group so that he can evaluate his standing and influence. This is an important part of the development of the group structure and its interactive process. The stability of the group is important because if a crisis were to arise then accurate decisions about the group's actions might need to be made.

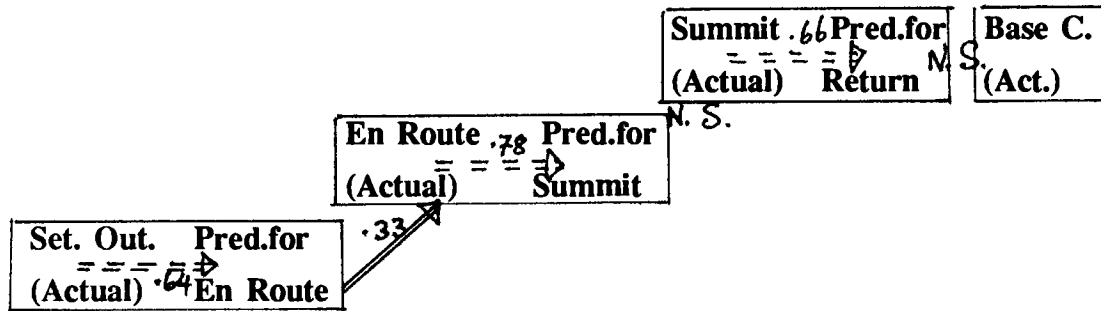
Some of the expectations of the climber will have been realized but now expectations for the rest of the expedition can be readjusted in the light of the new experiences. Thus predictions can be based on more concrete information.

We examine the regression coefficient links of incentive across the climb beginning with the climbers' predictions made at setting out.

Figure 8.16 shows how various climber-rated variables enter the explanatory picture through regression analysis with the significant predictive pathways represented by solid lines and other significant links in dotted lines; the green boxes denote the stage when ratings were taken.



**Figure 8.16 Incentive: prediction links across the climb.**



The general features of Fig. 8.16 are that predictions made earlier in the climb do correspond with the actual later ratings, but that there is yet a stronger link between current stage ratings and the predictions climbers immediately make.

## 1 PREDICTIONS FOR INCENTIVE LEVELS EN ROUTE.

**Table 8.15a Incentive: Links between Predictions for En Route and En Route (Actual).**

	B	SE B	Beta	Part Cor	T
PRED.FOR EN ROUTE	.331	.127	.327	.201	2.606

**Table 8.15b. Breakdown Analysis for Incentive Scores En Route.**  
Component Items of Incentives.

	Goal- Realization	Morale	Challenge	Satis- faction	Esteem.	Coopera- tion.
PRED. EN ROUTE	.32				.32	

### a) Links between predicted and actual En Route ratings.

This significant link,  $\beta = .33$ , shows that the climber could predict with some accuracy the incentive factors that would be influential at the next stage. The breakdown analysis revealed that the link resided mainly in goal realization and esteem.

#### i) Goal realization ( $\beta = .32$ ).

This is one of the instances where the link ought to have been strong because of the long term 'predictive' nature of the concept itself.

**ii) Esteem (b.= .32)**

The climber's predictions about self esteem proved to be correct with esteem confirmed as one of the influential links en route.

**2 PREDICTIONS FOR INCENTIVES AT THE SUMMIT.**

**Comment.**

We now examine predictions made en route (stage 2) about the summit (stage 3).

The results show that in fact there was no significant link between predictors for Summit and Summit actual. The implication is that climbers cannot or do not know what their incentive status will be when they reach the summit. Thus any prior assessments of morale, satisfaction and so on became readjusted when the climber reaches the summit.

**3 PREDICTIONS FOR RETROSPECTIVE EVALUATION OF INCENTIVE FACTORS AT THE RETURN TO BASE CAMP.**

Here the climber was asked to look ahead to the base camp and predict how he or she would feel about the expedition as a whole and what would seem important in retrospect.

As the individual makes the predictive responses the physical context effects of the mountain will be very tangible. Mountain tops can be desolate places with many individuals strongly affected by the vastness, the distance, the raw beauty and so much more. Some will show signs of tiredness and fatigue but all will feel elation, joy and a sense of pride in their achievement. The relief of being successful relegates any negative feelings very much to the background.

This then, is the context in which climbers are being asked to predict their incentive status on return to base camp. Certainly, some stress will be present because the return journey still needs to be negotiated. They will probably have been warned that the downward journey can be just as dangerous as the climb up. But the elation deriving

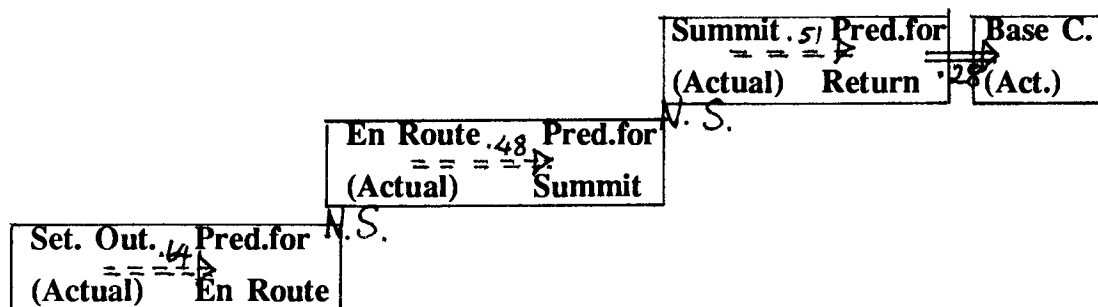
from a strong sense of achievement and the spectacular landscape may prove a major bias for any forecasting exercise.

Thus it becomes less surprising to find that there was no significant link between predictors for the base camp retrospective ratings and how they actually turned out. As with the predictions for the summit, climbers' retrospective predictions were considerably adrift.

### 8.3.2. PREDICTION OF RISK ACCEPTANCE

The task is to examine how successfully climbers could predict the risks they would find acceptable at the next stage of the climb. Figure 17. shows how various climber-rated variables for risk acceptance enter the explanatory picture through regression analysis.

Figure 8.17. Risk Acceptance: prediction links across the climb.



The general features of Fig. 8.17 are that predictions did not correspond with the actual ratings at the next stage except in the case of predictions of risk acceptance as they would be retrospective to the climb, ( $b = .28$ .) However, again strong significant links were found for the two contemporaneous ratings of "how you feel now" and "how you will feel at the next stage"  $b = .64$ ,  $b = .48$ , and  $b = .51$  respectively.

#### 1 PREDICTIONS FOR RISK ACCEPTANCE EN ROUTE.

It can be seen in Figure 8.17. that no climber ratings linked predictions for en route and en route actual ( $b = -.003$ ). Thus the contemporaneous link was stronger than the anticipatory link, notwithstanding what climbers thought they were estimating.

## 2 PREDICTIONS OF RISK ACCEPTANCE AT THE SUMMIT.

How well could climbers predict risk acceptance at the top of the climb?

No significant links were found between predictions and actual ratings, ( $\beta = .11$ ;  $p = .35$ ) It appears then that climbers are unable to predict risk acceptance levels at this stage either.

## 3 PREDICTIONS OF RISK ACCEPTANCE RETROSPECTIVE TO THE CLIMB.

On their return to base camp, climbers were asked for an overview of the climb as a whole. The question here is how successfully could climbers predict these retrospective assessments while still at the summit. The point was made earlier that the context in which the climbers are being asked to predict their risk acceptance levels, especially on the summit may prove a major bias against successful forecasting.

Here the link between predictors for ratings made at the summit and retrospective actual was found to be significant, with  $b = .28$ . It appears then that on the summit risk acceptance levels can be predicted with some accuracy at least.

Table 8.16a gives additional statistics of the significant predictive link with en route actual.

**Table 8.16a Risk Appraisal Scores: Influence of Predictions for Basecamp on Basecamp (Actual).**

	B	SE B	Beta	Part Cor	T
PREDICTIONS FOR BASE CAMP	.305	.096	.284	.275	3.197

Here predicted ratings have shown a significant relationship with the actual Retrospective ratings ( $b = .28$ ). The breakdown analysis shows where the links are.

**Table 8.16b. Breakdown Analysis: Retrospective Risk Appraisal Scores.**  
**Components of Risk Factor.**

	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control.	Uncertainty.
PRED.FOR BASE CAMP.			.32		.40	

Predictive ratings at the summit about actual retrospective ratings were linked via a sense of control, ( $b = .40$ ) and being supportive ( $b = .32$ ). One would feel that these factors are particularly relevant at the end of a difficult or arduous climb. In small-scale as well as major climbs doubts about completing can go through the climber's mind. Thus, a knowledge that other members of the party are willing to give assistance in some way may help climbers assess their own risk acceptance level. To some extent it is not surprising to find at the end of a climb that confidence, uncertainty, tolerance of mishap and willingness to accept the risk did not link significantly, because these are factors one would associate with the on going nature of the climb rather than its completion.

### **8.3.3. PREDICTIONS OF SITUATION.**

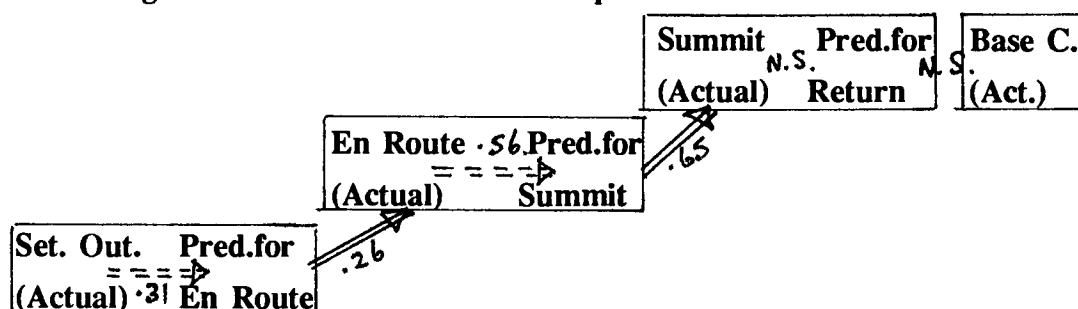
The findings here give some indication of the climber's ability to foresee his possible shortcomings and whether he can evaluate the demands of the developing climb, including the state of the weather and its effect on the route and the climber alike. Whether the climber, in assessing his situation, changes his plans or not, will depend very much on how well he predicts the effect of these factors on the climb.

The questions addressed to the climber are, can you predict your physical condition at the next stage and throughout the climb? Can you predict the level of difficulty of the climb and how will the prevailing weather conditions affect you? The questions to some extent are interrelated, because, if a climber finds himself affected by fatigue, then the route will automatically increase in difficulty, or if the group/climber decides to take too difficult a route, then this might result in a climber being unable to cope with the physical demands of the climb. Obviously,

if the weather conditions changed then less challenging routes could be tackled. Strong winds and driving rain cannot only make the route treacherous, raising the risk level, but it can also have a strong effect on the morale of the individual. The situation clearly dictates to the climber its own set of rules which every climber will need to recognise, at the same time maintaining enough programme flexibility to make readjustments as the need arises.

Figure 8.18 shows how various climber-rated variables for situation enter the explanatory picture through regression analysis with the significant predictive pathways represented by solid lines and other significant influential links in dotted lines. The green boxes denote the stage when ratings were taken.

Figure 8. 18 Situational factors: prediction links across the climb.



The main features show clearly that for en route and summit stages of the climb climbers were able to make fair or good predictions about physical conditions, ( $b = .26$  and  $b = .65$ , respectively.) Summit to basecamp predictions however were not so accurate and no significant links were found.

# 1. PREDICTIONS OF SITUATIONAL FACTORS FOR EN ROUTE.

As noted the link between predictors for en route and en route actual (presented in Table 8.17a) was significant at  $\beta = .26$ . Thus climbers' prior predictions made at setting out do have significant resemblance to actual En Route situational appraisals.

Table 8.17a gives additional statistics of the significant predictive link with en route actual.

**Table 8.17a Situation scores: Influence of Predictions for En Route on En Route (Actual).**

	B	SE B	Beta	Part Cor	T
PREDICTION FOR EN ROUTE	.238	.093	.259	.241	2.551

Table 8. 17b shows where the major links are.

**Table 8.17b. Breakdown Analysis.**

PREDICTION for E.ROUTE	Component Situational Factors.		
	Physical Cond.	Route Difficulty.	Weather Cond.
	.35.		

The major link is in fact in terms of physical condition ( $b = .35$ ), so that the climber in the early stages of the climb, can estimate with some consistency what will be his physical state at the next stage.

## 2. PREDICTIONS OF SITUATIONAL FACTORS FOR SUMMIT

The question here is how successfully could climbers predict en route how they would perceive the situation at the summit. An accurate prediction of the prevailing weather conditions for the summit is obviously important because, if a final thrust is to be made, then worsening conditions could put the whole party into a dangerous situation.

Table 8.18a gives statistical details of the significant climber-rated variables while Table 8.18b shows where the major links were. In this case, the link between what the climber predicted would occur on the summit and what actually happened was found to be a strong one, ( $b=.65$ ). This result is striking because it evidently shows an unusually high predictive accuracy for how the situation was appraised. Furthermore,

this accuracy is not an incidental artefact of the simultaneous "actual" and "predictive" response patterns resembling each other, as so often with previous analyses. The evidence for this is the clear absence of a significant connection from En route actual to Summit Actual in Figure 8.18.

**Table 8.18a. Situational ratings: Link between predicted and actual summit ratings.**

	B	SE B	Beta	Part Cor	T
PRED.for SUMMIT	.559	.067	.647	.647	8.302

**Table 8.18b. Breakdown Analysis for Situation Scores at Summit.**

Components of Situation Factors.			
	Physical Cond.	Route Difficulty.	Weather Cond.
PREDICTED FOR SUMMIT.	.26	.55	

**a) Predicted Situation ratings for Summit link with Summit actual via Route Difficulty (b=.55) and Physical Condition (b=.26).**

**(i) Route Difficulty.**

It can be seen from Table 8.18b. that the major locus of predictive contact between prediction for summit and summit actual was route difficulty, with a significant coefficient of  $b = .55$ . Now that the climb is well under way one could readily accept that route difficulty could become an influential factor.

**(ii) Physical Condition.**

The second major locus of contact for the prediction was the climbers' summit assessment of their own physical condition, with a significant coefficient of  $b = .26$ . Again as the climber nears the summit of the climb one would expect his or her physical condition to be influential. What these results indicate then is that the climber can assess his or her situation at the summit with some degree of accuracy.



### **3. PREDICTIONS OF SITUATIONAL FACTORS FOR BASECAMP.**

Having achieved the major goal or objective - in many cases the actual climbing of a major peak and standing at the highest point - the climber was asked to predict how he would feel retrospectively when the climb was completed. Here the link between predictions and actual retrospective ratings was not significant ( $b = .002$ ;). Perhaps this is because when the climb is viewed retrospectively the climber knows what did happen rather than what could happen. The uncertainty of the climb has been removed and what is therefore given instead is an appraisal of the major effects of the climb.

Nevertheless, as an overall observation here, it seems that climbers could predict for the major part of the climb, physical influences and conditions with some degree of accuracy.

## 8.4. WHAT LIMITS CLIMBERS' ABILITY TO PREDICT THEIR OWN LATER SELF-ASSESSMENTS?

A feature already noted in the previous section is the consistent relationship that ratings at the time have with predictive ratings making reference to the next stage. As predictive responses were always obtained immediately after the current or actual ratings, some similarity may be thought inevitable. This could be because the actual ratings themselves had carry-over, or because of the "common factor" reason that any ratings on the same theme in the same time frame are going to have some similarity.

Figure 8.19 Incentive: Limitation of Predictive Links across the Climb

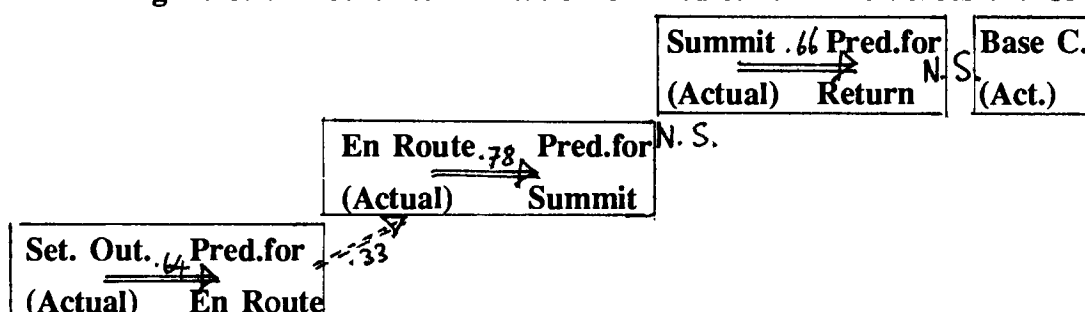
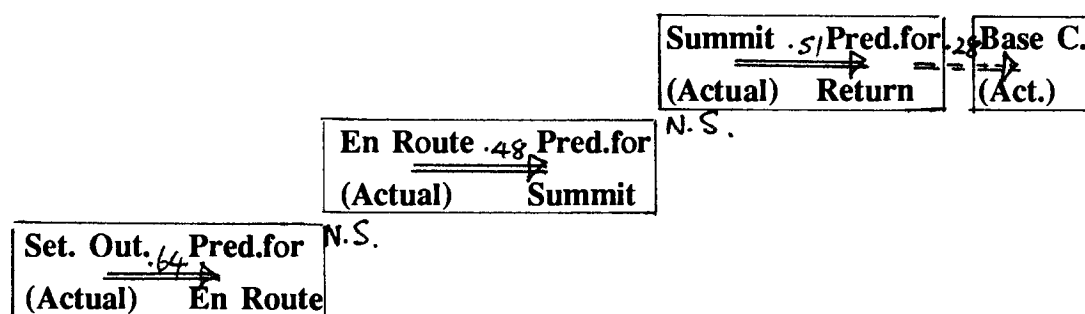
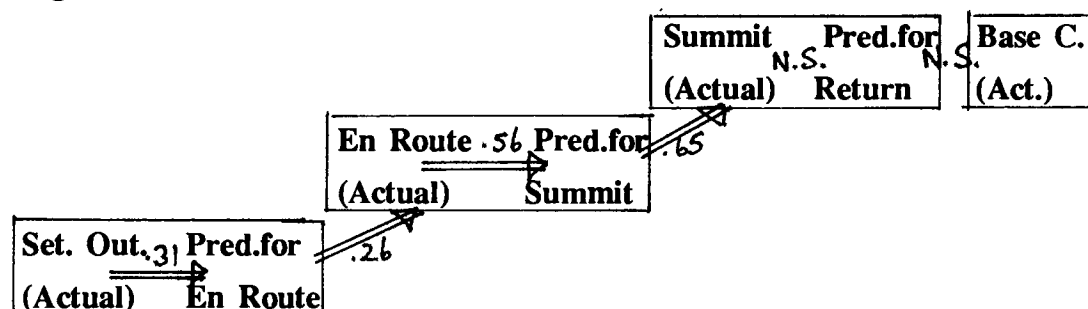


Figure 8.20 Risk acceptance: Limitation of Predictive Links across the Climb



Examination of within-stage links for the incentive and the risk data (Figs. 8.19 and Figs. 8.20) shows that generally they are stronger than the between-stage or predictive links - in most cases markedly so. Nor does this relationship change as the climb progresses.

**Figure 8.21 Situational Factors: Limitation of Predictive Links across the Climb**



As Figure 8.21 shows, the picture for situational predictions is considerably better: for each of the three between-stage predictions, the predictive link itself is as strong or stronger than the "rival" same-stage link. This could be because although weather conditions will of course vary between climbing groups, for a given group situational factors will remain sufficiently stable so as to make next-stage predictions relatively accurate. By "relatively" here is meant relative to the case of incentive or risk estimates which being internal to the person can be more susceptible to unanticipated change. Although this kind of explanation may be attractive, it has to be said that the mean perceived levels for situation plotted in Fig. 8.4. are characterised by as much or more change as are incentive or risk.

A modified design, not in fact used, could help provide an answer to the question of whether predictions are in fact poor or whether they are merely being distorted here by carry-over from the current ratings. Thus, groups making both actual and predictive ratings as here could be compared with groups making predictive ratings only. If the latter groups showed stronger links then blame could be laid at the door of swamping or carry-over from the prior ratings. On the other hand, if the latter groups continued to show pretty much the same pattern as here, it could be reasonably assumed that prediction per se was weak.

# **CHAPTER NINE**

## **RESULTS 2: CLIMBERS' PERCEPTION OF THE GROUPS' APPRAISALS.**

### **9.0 General Comment:**

Before discussing any findings relating to the group the reader needs to be reminded of the derivation of the responses. In the preceding discussion it was made clear that the individual was asked to respond to a series of self-related questions using his own personal perception of the situation. For the "group" results, individuals were now asked to rate how they perceived the group would respond to the situation. Again two kinds of data are presented here: first trends in mean ratings over the course of the climb, and second the regression links among these same sequential measures.

In order to keep the emerging picture tolerably clear and understandable the results presented in Chapter 9 will focus on the mean trends, with the multiple regression data then being presented only in summary form.

Again the results have been cast as a series of research questions which represent the components of the overall research problem. These are as follows:

### **PERCEIVED GROUP APPRAISALS:**

- 9.1. What stability and change is found in climbers' perceptions of the group over the course of the climb?
- 9.2. Do instructor ratings differentiate climbers' estimates of their group?
- 9.3. Can climbers predict their perceptions of the group during the course of the climb?
- 9.4. What limits climbers' ability to predict their perception of the group over the climb?

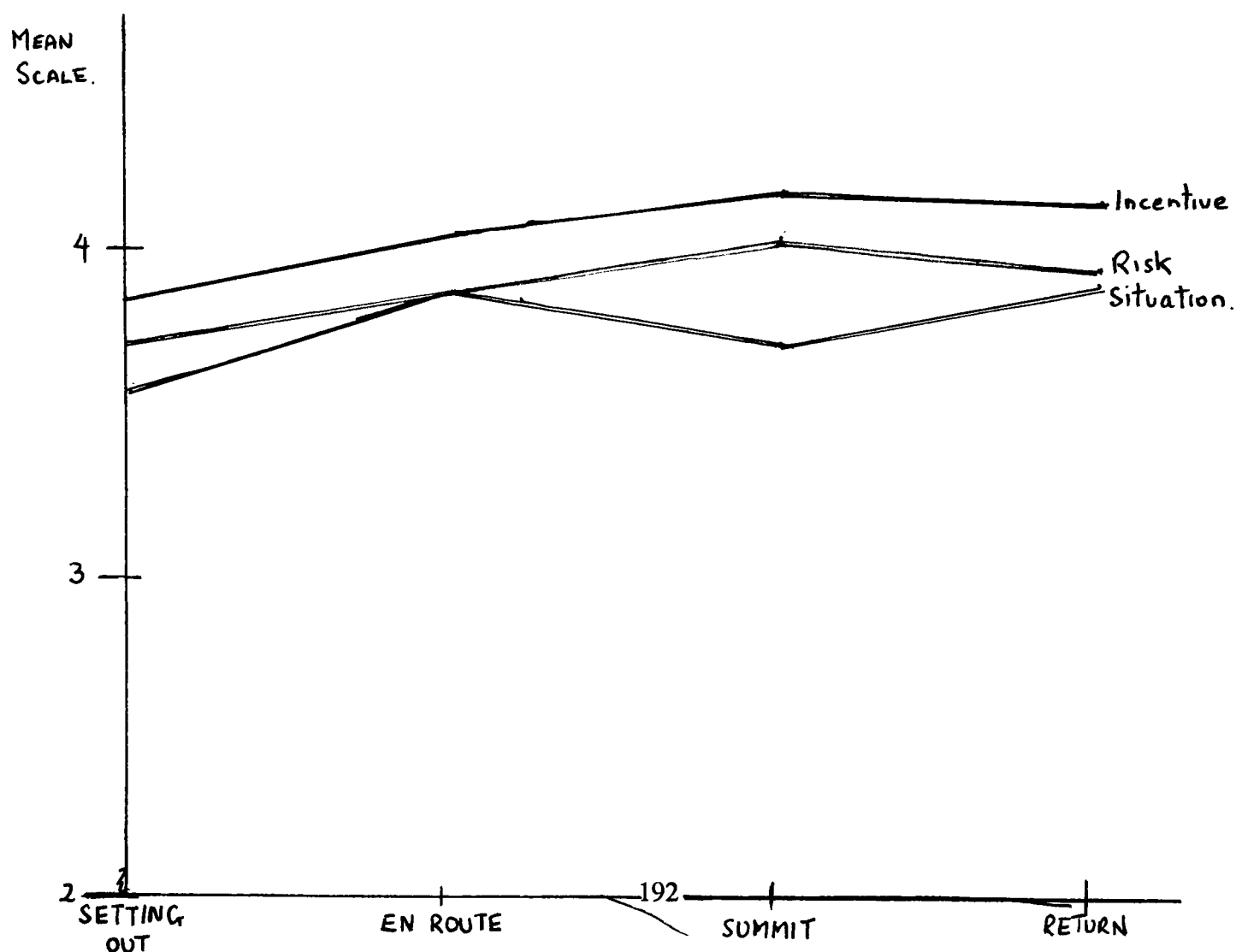
## 9.1. STABILITY AND CHANGE IN CLIMBERS' PERCEPTIONS OF THE GROUP OVER THE COURSE OF THE CLIMB.

To give an instant overview of the general picture the mean level trends over the climb are presented in Figure 9.22 for all three main factors, Incentive, Risk and Situation.. This is followed in Figure 9.23 by detailed breakdowns into constituent graphs for each component of these factors.

### 9.1.1. TRENDS IN MEAN RATINGS.

Figure 9.22

COMPARISON OF INCENTIVE, RISK AND SITUATION FOR PERCEIVED GROUP MEAN RATINGS:



## **A. GENERAL APPRAISAL.**

### **a) INCENTIVE**

It can be seen in Figure 9.22 the group mean responses followed a similar pattern to the individual mean responses (Figure 8.1) where the trend throughout the climb was for the importance of Incentive to increase linearly to the Summit, with a slight decrease at Basecamp. However the perceived group trend was a little higher during the operational part of the climb and at Basecamp, than were self perceptions, while the self responses were more important at the Summit phase. Thus as for the self analysis, the strength of incentive in the group was seen to increase as the climb progressed.

### **b) RISK.**

It can be seen that Risk tolerance too, increased in importance linearly as the climb progressed and also dipped after the top had been reached. For most of the climb the mean level for the group responses was higher than that for self-ratings.

### **c) SITUATION.**

Non-linear trends in the mean ratings for perceived group ratings over the climb are to be expected as specific changes in weather conditions and variation of terrain would occur naturally.

### **d) SUMMARY**

A comparison of the trends in mean ratings of the three concepts, Risk, Incentive, and Situation, over the stages of the climb highlights three main findings:

1. there is a general heightening (increase in ratings) as the climb progressed. This means that group members appear to the individual climber to show more incentive and greater acceptance of risk as the climber progresses to the top.
2. the predictions for the next stage were consistently underestimated.
3. the mean ratings perceived as holding for the group were consistently higher than the individual mean ratings throughout the climb.

## **B. DETAILED APPRAISAL OF CONSTITUENT GRAPHS.**

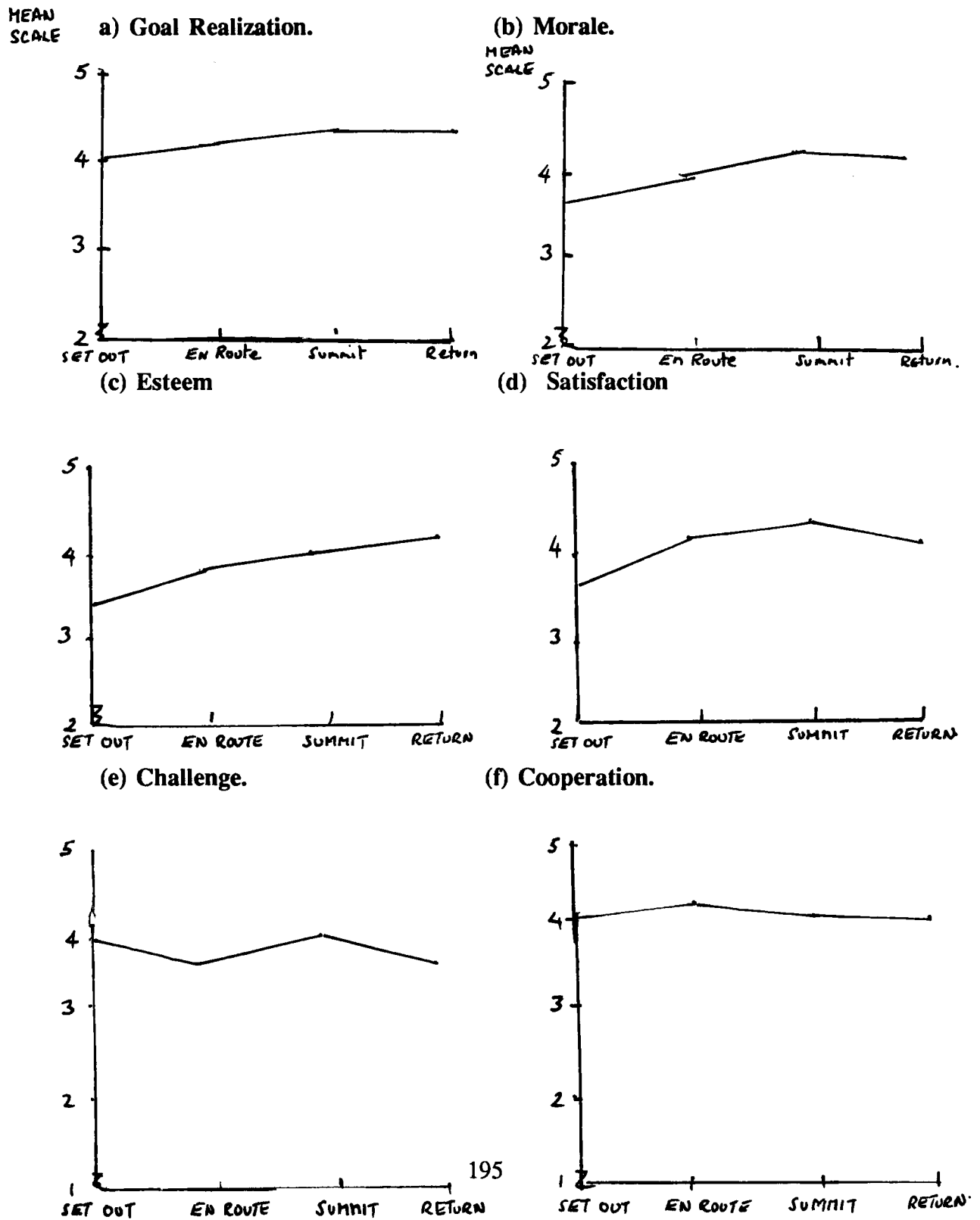
### **1) ITEMS FOR INCENTIVE.**

It will be recalled that the items encompassing the Incentive label were: goal realization, morale, challenge, satisfaction, esteem, cooperation.

The same pattern for presenting the results is followed for all analyses. Thus, we begin with the answers provided at the base camp before setting out.

Again the intercept or mean level data on changes in absolute levels of perceived group incentives over the climb are presented first. Figure 9.23 a-f shows how the measures grouped under perceived group incentive vary over the climb. Thus in Fig. 9.23a the importance of achieving the goal rose as the climb progressed, and remained high even when the group were back at base. Morale of the perceived group as shown in Fig. 9.23b also rose as the climb progressed in this case rather more steeply. In Fig. 9.23c the perceived group seemed to feel that the importance of the challenge after the initial stage had diminished in importance, although the initial mean rate level was rated highly. Fig. 9.23d shows that the perceived group were increasingly satisfied with the climb as it developed up to the summit. The level of esteem as shown in Fig. 9.23e followed a similar pattern with perceived group esteem rising from stage to stage through to the completion of the climb. Fig. 9.23f shows that cooperation remained an important incentive throughout the climb.

**FIGURE 9.23 DIAGRAMMATIC OVER VIEW FOR PERCEIVED GROUP MEAN LEVEL TRENDS OVER THE CLIMB FOR COMPONENTS OF THE INCENTIVE FACTOR.**





## **2) CONSTITUENT ITEMS FOR RISK.**

### **Results for Perceived group Risk Appraisal.**

The "Risk" label encompasses the following items: confidence, willingness to accept risk, support, mishap tolerance, sense of control and uncertainty.

Figure 9.24 shows how the measures grouped together under risk vary over the climb. Thus in Fig. 9.24a it can be seen that the confidence of the climbing groups is rated progressively higher from starting out, through to the first break and on to the summit. The rating then drops again for the final retrospective assessment on return to base. It does make intuitive sense that group confidence should be seen to heighten, as managing successive stages increasingly dispels doubts about success. It also makes sense that the retrospective assessment should be a rough average.

In Fig. 9.24b one can see that the climbing groups' willingness to accept risk is perceived as consistent throughout the climb.

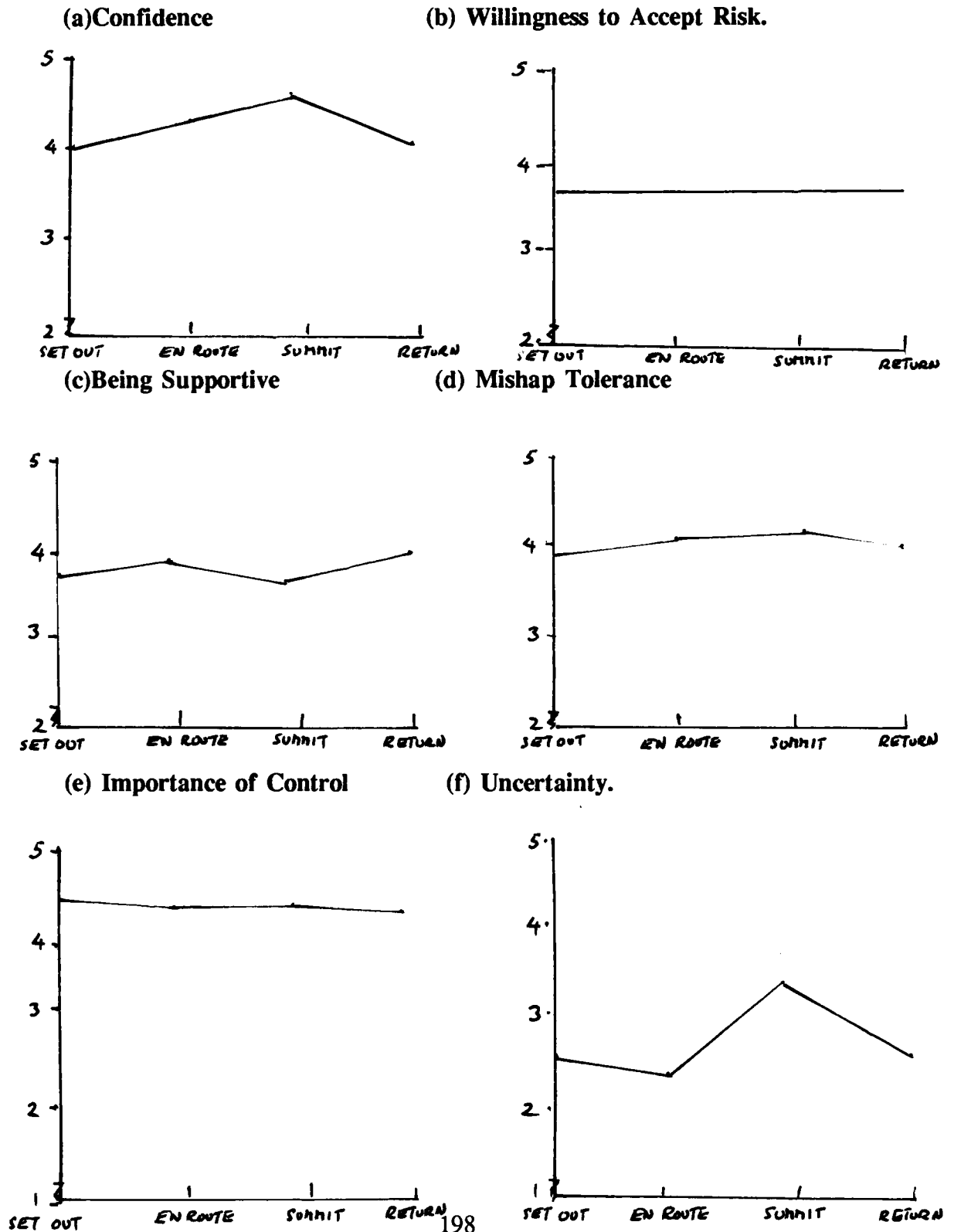
Fig. 9.24c shows that at the end of the climb, the groups' rated being supportive highly, although at the summit the mean level score dropped slightly. This to some extent mirrors the climb because the first 'leg' will be very hard work with a real practical need for every climber to be supportive to ensure completion of the climb. At the summit, where the need to be supportive is not so acute, because the goal has been achieved one could expect some drop in ratings. Yet when the climbing groups reflect on the climb as a whole when back at base, being supportive was once again rated highly.

Fig. 9.24d shows that the climbing groups' willingness to tolerate any mishap during the journey was steady, with a rise in the trend while climbing and with a drop when the climb was over.

The climbing groups felt that being in control of oneself and the situation, as shown in Fig. 9.24e, was extremely important if the climb was to be successful. This feeling of importance was highly consistent throughout the climb with only a very slight tailing off.

Fig. 9.24f plots the uncertainty of the climbing group over the climb. Climbers' felt that their group showed more uncertainty about completing the climb at the summit where presumably they were very tired. The retrospective mean trend measure reflected the average of the climb.

**FIGURE 9.24. DIAGRAMMATIC OVERVIEW OF PERCEIVED GROUP MEAN RATING LEVELS OVER THE CLIMB FOR COMPONENTS OF THE RISK FACTOR.**



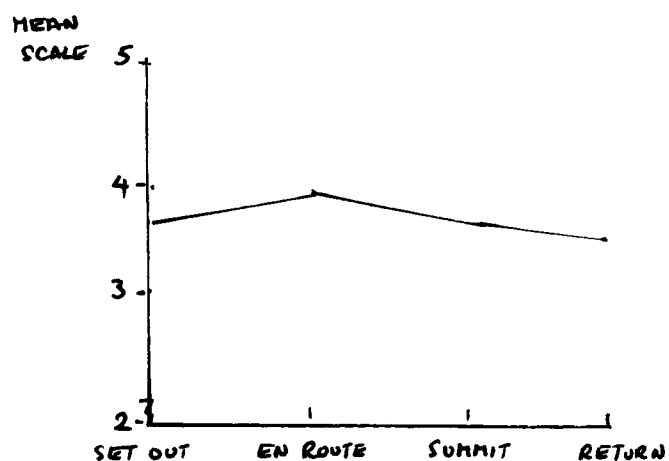
### **SITUATION COMPONENTS OVER THE CLIMB.**

For these group results, climbers were asked to indicate how they felt their group would respond to matters concerned with the situation. The situational items were physical condition, route difficulty and weather conditions. Figure 9.25 shows how the measures grouped together under situation vary over the climb. Thus in Fig. 9.25a it can be seen that perceptions of the climbing group's physical condition improve slightly from starting out up to the first break, but after this begin to drop through the summit stage to below that of starting out for the final retrospective assessment on return to base. This to some extent could be expected where the climbing group's physical condition unlike the individual climber, gradually deteriorates over successive stages after the first demanding stretch. The retrospective assessment is perhaps a typical reaction to a demanding and exhausting climb.

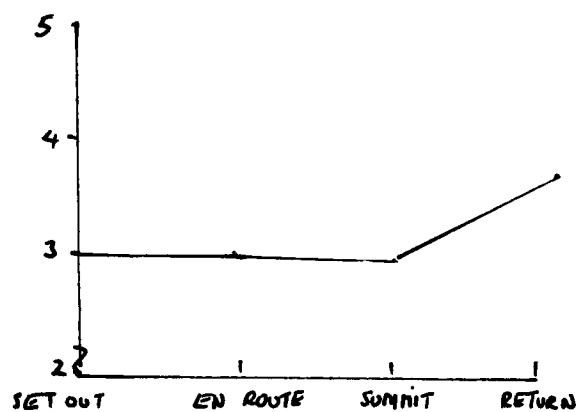
In Fig. 9.25b one can see that the climbing groups' assessment of the route difficulty was consistent, with little variation of ratings up to the summit. Here as in the self perception the retrospective assessment of the difficulty of the route increased very sharply indeed. Fig. 9.25c shows that mean level weather conditions trends were good at the first part of the climb with the best conditions to be found when the climbers were en route, probably in the middle of the day. However, onwards and upwards to the summit climbing groups rated conditions as deteriorating markedly. As pointed out earlier this is not unusual as mountain tops are inhospitable places, often windy and cold. The retrospective assessment would be at the end of the day as well as at the end of the climb so one would not expect the assessment to be an improvement on the mid day assessment.

**FIGURE 9.25 DIAGRAMMATIC OVERVIEW FOR PERCEPTION OF THE GROUP MEAN LEVEL TRENDS OVER THE CLIMB FOR COMPONENTS OF THE SITUATIONAL FACTOR.**

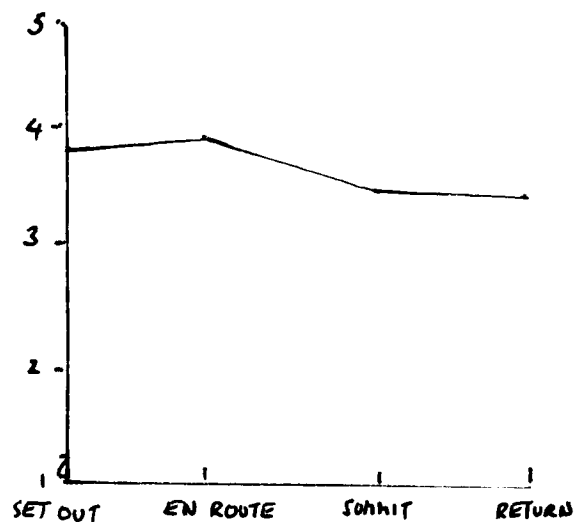
**a) PHYSICAL CONDITION.**



**(b) ROUTE DIFFICULTY.**



**(c) WEATHER CONDITIONS**



### **9.1.2. REGRESSION LINKS BETWEEN STAGES OF THE CLIMB. INTRODUCTION.**

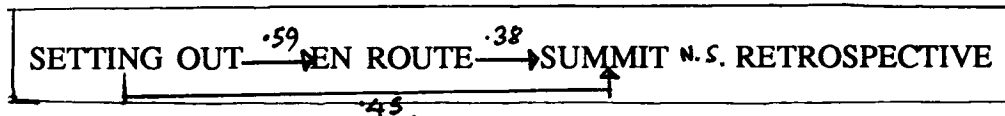
In this section we wish to examine both items that constitute the major concepts, i.e. incentive, risk and situational factors, and progress of the climbers' perceived group assessment over the course of the climb. The task is to determine which variables remain stable or change as the climb develops. Once again multiple linear regression analysis was used to quantify the explanatory picture. Thus in addition to mean trends or intercept data a more complete picture is provided with the slope coefficients linking explanatory variables with target variables.

Figure 9.26, 9.27, and 9.28 shows how various climber-rated variables for Incentive, Risk and Situation respectively, enter the explanatory picture through regression analysis.

In comparing these perceptions of the "group" with self paths, considerable similarity is evident. Risk paths, for instance, are identical, while Incentive and Situational paths only differ slightly. However, differences of linking items were revealed from the breakdown analysis for Incentive and Risk showing that the components of climbers' perception of the group were indeed changing from stage to stage.

## A) INCENTIVE.

Figure 9.26.



We begin the analysis by examining links between answers provided at the base camp before setting out with answers obtained at the first stop (Stage Two: en route). Only significant links are reported here.

Table 9.30a Incentive Scores at 'En Route'

	B	SE B	Beta	Part Cor	T
SETTING OUT ACTUAL	.663	.093	.589	.589	7.133

### 1) Links between Setting Out and En Route.

The (high) coefficient of .59 indicates that the significant links between these stages are reasonably stable. From the breakdown analysis the major links between the two stages were found to be through cooperation ( $b = .43$ ) and esteem, ( $b = .35$ .)

Table 9.30b.  
Breakdown Analysis for Incentive Scores at En Route.

Component Items of Incentives.					
Goal- Realization	Morale	Challenge	Satis- faction	Esteem.	Coopera- tion.
SETTING OUT				.35	.43

Fewer linking items occurred for "group" than for self perceptions. Perhaps the climber's view of the group is as yet limited since the climb is still developing.

### 2) Links between En Route measures and Summit Ratings.

We now examine climbers' perception of the group at Stage 3: Summit, as they relate to Stage 2 in particular, and also to Stage 1 (Setting out). Significant links were found for both stages; Table 9.31a gives the details.

**Table 9.31a Incentive Scores at Summit.**

	B	SE B	Beta	Part Cor	T
SETTING OUT	.428	.091	.449	.340	4.729
EN ROUTE	.321	.076	.379	.303	4.211

The interpretation here is that judgments made at previous stages carry forward and hold good until the Summit.

**a) Setting Out Ratings link with Summit Ratings.**

**Table 9.31b.****Breakdown Analysis of Incentive Scores for Summit.**

Component Items of Incentives					
	Goal- Realization	Morale	Challenge	Satis- faction	Esteem. Coopera- tion.
SET.OUT ACTUAL				.30	.21
EN ROUTE ACTUAL			.29	.38	.23

One would expect a climber's goals and objectives to link across the stages but this has not been the case as the breakdown analysis shows here. In this case cooperation, (b =.30) satisfaction (b =.29) and esteem, (b =.21) are the significant incentive links with the summit. Showing that cooperation and esteem continue to be the significant linking strands from setting out, (cf. Table 9.30b).

**b) En Route Ratings link with Summit Ratings.**

From the breakdown analysis, (Table 9.31b) satisfaction and esteem were found to be the significant links again.

**3) Links between Summit and Retrospective Ratings.**

Consistent with the self perception results no significant links were found.

**4) Summary:** It is fairly clear therefore that the main continuity for how group incentive levels are perceived lies through the esteem, satisfaction and cooperation items. Morale and goal realization never show through.

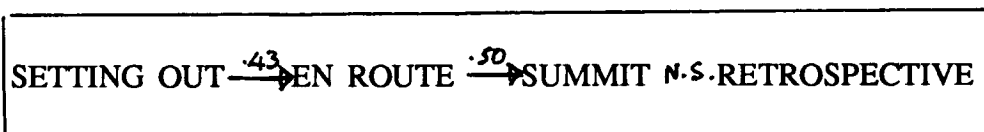


## B. RISK ACCEPTANCE.

Once again the same model for presenting the results is followed as for previous analyses.

Figure 9.27 shows how various climber-rated variables for risk enter the explanatory picture through regression analysis. It can be seen that significant links were found between Setting Out stage and En Route, ( $b=.43$ ); En Route and Summit, ( $b=.50$ ).

**Figure 9.27.**



**Table 9.32a Risk Scores at "En Route"**

	B	SE B	Beta	Part Cor	T
RISK SET.OUT	.377	.100	.430	.299	3.756

### 1) Links between Setting Out responses and En Route responses.

a) In Table 9.32a there is a clear link between the ratings of the group for setting out and en route ( $b = .43$ ). Table 9.32b shows that the en route perceptions link particularly in terms of willingness to accept risk ( $b = .40$ ) and importance for group members to maintain a sense of control over themselves and the situation ( $b = .35$ ).

**Table 9.32b. Breakdown Analysis for Risk scores En Route.**

COMPONENTS OF RISK FACTOR.					
	Confidence.	Will to Accept R.	Support	Mishap Tolerance	Control. Uncertainty.
RISK at SET.OUT.		.40			.35

### 2) Links between En route measures and Summit ratings.

a) Climbers' Risk ratings of the Group "en route" relate significantly to their later ratings at the summit.

**Table 9.33a. Perceived group Risk Scores at the Summit.**

	B	SE B	Beta	Part Cor	T
RISK EN ROUTE	.572	.085	.504	.493	6.703

As with the individual ratings, there was a link between ratings at en route and summit with a (high) beta coefficient of .50. This reflects once again how consistent actual ratings have linked with actual ratings at the next stage. Table 9.33b shows that a willingness to accept risk (b =.51) was a common link en route and at the summit as was the group's ability to be supportive (b =.27).

**Table 9.33b. Breakdown Analysis for Perceived Group Risk Acceptance at the Summit.**

COMPONENTS OF RISK FACTOR.					
	Confi- dence.	Will to Accept R.	Support	Mishap Tolerance	Control. Uncert- ainty.
RISK EN ROUTE		.51	.27		

**3) Links between Summit measures and Basecamp (retrospective) ratings.**

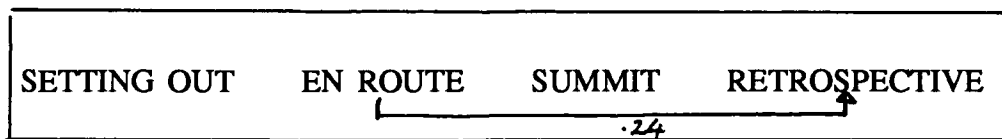
As Figure 9.27 shows these climber ratings remained unhelpful as sources of explanation for perceived group risk acceptance over the climb as a whole.

**4) Summary.** Not surprisingly continuity for risk acceptance levels for the most part of the climb was found to be through willingness to accept risk item. Confidence, mishap tolerance and uncertainty did not feature at any stage.

### C) SITUATIONAL FACTORS.

The items that constitute Situation were: climber's physical condition, route difficulty, and weather conditions. Figure 9.59 shows how various climber-rated variables for situation enter the explanatory picture through regression analysis.

Figure 9.59.



The only significant climber-rated link for the whole of the climb was between En Route actual and Retrospective ratings, ( $b=.24$ ). However, the link is non-consecutive and in the absence of any theoretical basis as to why, can be treated as fortuitous.

Table 9.34a.

	B	SE B	Beta	Part Cor	T
EN ROUTE ACTUAL	.251	.096	.244	.223	2.612

#### SUMMARY

Incentive and Risk Acceptance show clearly significant covariance for perception of the group between successive stages at least up to the summit but the Situational path shows no significant consecutive links at all. However, for Incentive and Risk acceptance the inference of evolving continuity seems reasonable particularly in the early part of the climb, while the lack of continuity at the return is not surprising as the climber is now no longer engaged in the experience of the climb. On the whole one could say that the data does show stability over the climb.

## **9.2. DO INSTRUCTOR RATINGS DIFFERENTIATE CLIMBERS' ESTIMATES OF THE GROUP?**

### **9.2.1. RESULTS FOR INCENTIVE.**

#### **General Comment:**

The purpose of this section is analogous to that of Chapter 8.2. which concerned differentiation of climbers' self-perceptions of the climb on the basis of instructor ratings of their age, ability and suchlike variables. The specific question to be asked here is, given that climbers will differ in the way they perceive their respective groups during the expedition, is it possible to find systematic differences in terms of these instructor classifying variables.

The intention here is again to treat the climbers' perceptions of the group as contextual data for the self ratings which constitute primary focus. Accordingly the results can continue to be treated in a more condensed form.

For these group' results, individuals were asked to respond to how they perceived the group would respond to the questions asked. Gill (p315) in Silva (1984) reminds us that the evaluation of group performances is a complex one and therefore not an easy task for analysis.

"all the variables that influence individual performance (e.g., evaluation, attributions, etc.,) operate on individuals within groups but when team performance is an issue a host of complex interacting, social psychological variables are introduced."

### **9.2.1. RESULTS FOR INCENTIVE.**

It will be recalled that the items encompassing the Incentive label were: goal realization (how important is it for the group to achieve their goal?), morale (assess the level of the group's morale), challenge ( how

Figure 9.29 shows how various instructor ratings relate to climbers' perceived group ratings of incentives over the climb, stage by stage. Significant pathways are shown as follows: Setting Out in black, En Route in red, Summit in grey, Retrospective in green. Significant coefficients are entered in red.

The path diagram illustrates the relationships between various predictors and four outcomes. The predictors are listed on the left, and the outcomes are on the right. Standardized path coefficients are shown on the arrows.

Predictor	RETROSPECTIVE	SUMMIT	EN ROUTE	SETTING OUT
<u>GENDER</u>				
AGE RANGE				
ABILITY.				
<u>EXPERIENCE.</u>	.40			
<u>FITNESS.</u>		.21		
RISK LEVEL.				
<u>COMMITMENT.</u>				
<u>GP. STATUS.</u>				
GP. EXPERIENCE.			.34	
SCHOOL TYPE.				.32
R.DIFFICULTY.				.42
W.CONDITION.				

Additional paths shown in the diagram:

- From COMMITMENT. to RETROSPECTIVE: -.25
- From COMMITMENT. to SUMMIT: .34
- From COMMITMENT. to EN ROUTE: .32
- From COMMITMENT. to SETTING OUT: .42

**a) Table 9.35a. Perceived Group Incentive Scores at 'Setting Out'**

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a) It can be seen that at setting out group status (with or without a leader) and commitment of the climber both differentiate.

Thus differences are shown to exist between groups led by adult leaders and those without. In particular from the breakdown analysis, two items, were found to be significant, morale ( $b = .44$ ) and esteem ( $b = .24$ ), the same loci of effect were found in the self analysis.

Commitment, ( $b = .32$ ) differences were also found to have a significant influence on the climbers' responses. From the breakdown analysis it was found that commitment relates to morale and satisfaction. Thus the greater the instructor's ratings of commitment the greater that climbers perception of group morale, ( $b = .39$ ) and group satisfaction, ( $b = .26$ ) at setting out.

b) The "En Route" stage: In fact, no instructor-rated variable differentiated climbers' estimates at the en route stage. This is in marked contrast to the self data at en route where group status, commitment and weather conditions were significantly influential.

**c) Table 9.36a Perceived Group Incentive Scores on the Summit.**

	B	SE B	Beta	Part Cor	T
GENDER	1.660	.602	.213	.199	2.759

Significant gender, ( $b = .21$ ) differences were shown on the Summit stage but no constituent items elucidated the relationship.

**Table 9.37a Perceived group Incentive Scores at Return (basecamp).**

	B	SE B	Beta	Part Cor	T
EXPERIENCE.	1.266	.418	.359	.267	3.029
WEATHER COND.	1.680	.465	.336	.319	3.613
FITNESS	-1.157	.531	-.252	-.192	-2.181

d) Instructor-rated differences were also found at Return As Table 9.37a shows climbers' ratings of Incentives retrospective to the climb were influenced by weather conditions experience and fitness.

**i) Weather Conditions:** Different weather conditions had different effects on climber's incentives. A significant beta coefficient of .34 shows that the better the weather conditions then the greater the perceived group incentive to complete the climb. Obviously a knowledge of the weather conditions would keep the climbing group informed of any possible problems and threats to the successful achievement of that goal. This is endorsed by the breakdown analysis highlighting goal realisation as the major locus of effect,  $b=.55$ . This seems a consistent finding as indeed does difference in the level of challenge, ( $b.= -.17$ ) since the level of challenge decreases in good weather.

**ii) Experience:** Experience becomes influential (for the first time) with a significant coefficient of .36. Thus the greater the level of experience then the greater the perceived groups' incentive The breakdown analysis shows that the specific incentive that relates to experience was morale,  $b.= .33$ . Here the greater the climbers experience as rated by the instructor, the greater the climber's perceived morale of the group.

**iii) Fitness level:**

Differences in fitness levels were found to be of significant influence on the climbers' incentive,  $b.= -.25$ . Climbers would generally, accept that fitness levels in the mountain are of paramount importance both to safety and success: obviously the fitter the climber is the more likely he/she is to complete the climb. However, not unnaturally the lower the fitness level the less willing were the perceived group to accept the challenge, ( $b.= -.23$ ). An absence of fitness as a differentiating factor has been a surprising omission throughout this study.

**e) Non-Significant Differentiator.**

It is clear that for these perceptions of group data a number of instructor-rated variables play no part in differentiating climbers' ratings at any stage. These include the climber's ability, route difficulty, and in relation to incentives risk level, age and group experience.

**f) Summary.** Overall it can be said that some instructor-rated variables such as gender, weather condition, fitness, and experience differentiated the climbers' estimates at some but never more than one stage. Fitness and prior experience, for the first time in either self or group perspective were significant differentiators.



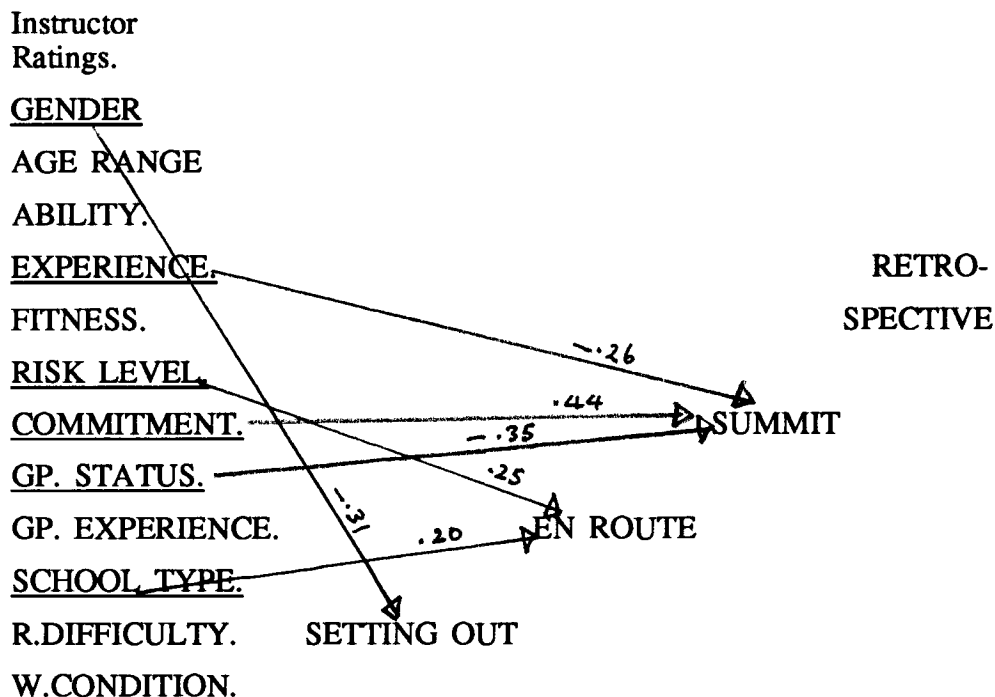
### 9.2.2 RESULTS FOR RISK ACCEPTANCE

For these group results, climbers were asked to indicate how they perceived the group would respond to matters concerned with risk.

It will be recalled that the "Risk" label encompasses the following items: confidence, ( how confident are you of the group's ability and efficiency?); willingness to accept risk, (how willing do you think the group are to accept risk?); support, (how supportive are the group to you?); mishap tolerance, (how willing would the group be to continue the expedition if a minor accident were to occur?); sense of control, (how important is it for the group to be in control of themselves and the situation?) and uncertainty, (assess the group's uncertainty to the outcomes of the climb)

Figure 9.30 shows how various instructor ratings relate to climbers' perceived group ratings of risk acceptance over the climb. Significant pathways are shown as follows: Setting Out in black, En Route in red, Summit in grey, Retrospective results in green.

**Figure 9.30. Risk Acceptance: Links between Instructor Ratings and Climbers' Perceived group ratings across the climb.**



The tables below give statistical details of significant instructor-rated variables.

**Table 9.38a Risk Scores Setting Out**

	B	SE B	Beta	Part Cor	T
GENDER	-2.262	.727	-.309	-.303	-3.111

**a) Gender relates significantly to risk appraisal at Setting Out.**

Differences between boys and girls in their perception of group Risk were found at the commencement of the climb. Here gender differences were centred on a willingness to accept risk, ( $b = -.23$ ) and having a sense of control, ( $b = -.22$ ). Girls then at setting out perceive the group as less willing to accept risk than do the boys. Girls also perceive their group as attaching less importance to being in control of themselves and the situation than did the boys. Perhaps, because the boys tried to dominate the group the girls did not feel that they were in control.

**b) Perception of Group Risk Appraisal En Route.**

**Table 9.39a Risk Scores at En Route.**

	B	SE B	Beta	Part Cor	T
RISK LEVEL.	1.157	.403	.254	.229	2.876
SCHOOL TYPE	1.089	.524	.199	.165	2.080

Now the climb is under way we can see how well the perceived group ratings could be explained by the prior instructor ratings.

**i) Risk Level ( $b = .25$ ).**

The climber's Risk Level was significantly influential ( $b = .25$ ), so that the greater the instructor's rating of Risk Level the greater the climber's perception of risk tolerance in the group en route. The locus of effect was a sense of control ( $b = .25$ ).

**ii) School type, ( $b = .20$ ).**

The type of school also makes a difference to predictions about group risk taking en route ( $b = .20$ ). Components of risk involved are primarily perceived as willingness to accept risk, ( $b = .37$ ) and also the perceived group confidence, ( $b = -.26$ ). Thus grammar school climbers

perceive the group as more willing to accept risk but also as having less confidence to do it than secondary modern climbers.

**c) Perception of Group Risk Appraisal at the Summit.**

**Table 9.40a.**

**Predicted Scores for Group Risk Acceptance at the Summit.**

	B	SE B	Beta	Part Cor	T
GROUP STATUS	-2.194	.511	-.346	-.316	-4.293
COMMITMENT	1.938	.390	.440	.366	4.976
EXPERIENCE	-0.968	.324	-.264	-.220	-2.984

**i) Groups with or without leaders differ on risk (b = -.35).**

Thus at the summit climbers without leaders perceive group risk acceptance differently from those with leaders. The main locus of effect lies with the importance of getting to the top, where leaderless groups perceived it less important than leader led groups, (b = -.59). Also leaderless groups perceived that other group members were more supportive, (b = .19)

**ii) Commitment differences: ( b =.44).**

Here the greater the individual's rated commitment the more likely he or she is to see the group as supportive (b=.31) and valuing control of themselves and the situation (b=.25).

**iii) Experience differences:**

Experience becomes influential with a significant coefficient of -.26. Thus the greater the instructor-rating of experience, the less the climber's perception of risk acceptance by the group. This relates strongly to the perceived supportiveness of the group (b=.28) and also the greater the climbers' rated experience again the less importance was attached to "getting to the top", (b = -.30).

**d) Risk acceptance at the Retrospective stage** Instructor-rated variables were unhelpful as sources of explanation for climbers' risk acceptance at the retrospective stage as no significant differences were found. Thus actual climbers' perceived group ratings for risk acceptance of the group retrospective to the climb were not differentiated by instructor-rated variables.

#### **e) Non-Significant Differentiators**

It seems from these findings that few differences concerning Risk existed at the commencement of the climb. Again as the climb developed en route only a few variables were influential. At the conclusion of the climb a number of instructor assessed ratings did not differentiate the climbers' estimates of risk acceptance such as ability, fitness, age, and group experience, while gender differences were not found influential later in the climb. One might have expected environmental variables to be influential, in particular, route difficulty and weather conditions, but these made no significant contribution to risk acceptance.

#### **f) Summary**

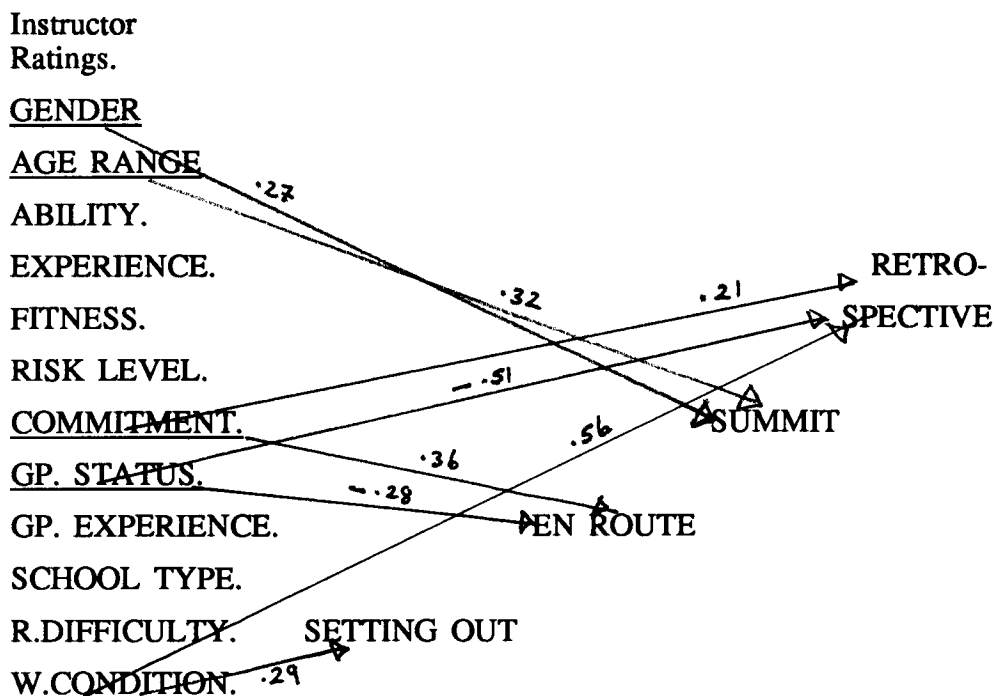
The explanatory variables of risk level and type of school were no longer of significance once the climber reached the summit, nor was gender after setting out. Group status, commitment, and experience had a differentiating role on the summit, showing that each stage of the climb was affected by the explanatory variables differently.

### 9.2.3. RESULTS FOR SITUATIONAL FACTORS.

Results here asked climbers to indicate how they perceived the group would respond to matters concerned with the situation.

Figure 9.31 shows how various instructor ratings relate to climbers' perceived group ratings of situation factors over the climb, stage by stage. Significant pathways are shown as follows: Setting Out in black, En Route in red, Summit in grey, with Retrospective results in green. Significant beta coefficients are entered in red.

**Figure 9.31. Situational Factors: Links between Instructor Ratings and Climbers' Perceived group ratings across the climb.**



Tables give statistical details of significant instructor-rated variables.

**a) Table 9.41a Situation Scores at "Setting Out"**

	B	SE B	Beta	Part Cor	T
WEATHER CONDS.	.732	.250	.286	.286	2.928.

**a) Weather conditions differ at Setting Out  $b = .29$ .**

Interestingly enough as the climbers begin their ascent perceptions of the group are influenced only by the possible weather conditions, ( $b = .29$ .) (One wonders here why the climber as an individual had not been equally concerned about the state of the weather). The locus of effect was also the weather conditions, which with the prior instructor-rated variable and the situational locus of effect being the same, points to the climbers' awareness of the situation.

**b) Perceived Group Ratings of Situational Factors at "En Route".**

**Table 9.42a Situation Scores "En Route"**

	B	SE B	Beta	Part Cor	T
COMMITMENT.	.794	.221	.357	.332	3.590
GROUP STATUS.	-.898	.331	-.281	-.251	-2.716

**i) Commitment differences ( $b = .36$ )**

The greater the instructor's assessment of the climber's Commitment, ( $b = .36$ ) to the climb, the greater the group awareness of the Weather Conditions, ( $b = .25$ ). **ii) Groups with or without leaders differ on risk ( $b = -.28$ ).**

Climbers in leaderless groups responded differently from those in groups accompanied by an adult leader. The difference lay mainly in the route difficulty,  $b = -.23$ . This points to groups without a leader being perceived as feeling that their routes were easier. This is a fair observation because on the whole routes taken by leaderless groups were less rugged because of the very fact of not having an adult leader. However, although the terrain was not so rugged the physical demands could still be as taxing and in addition the routes were technically more difficult in relation to navigation and personal survival.

**c) Perceived Group Ratings of Situational Factors at the Summit.**

**Table 9.43a. Perceived Group Situation Scores at Summit.**

	B	SE B	Beta	Part Cor	T
AGE RANGE	1.044	.292	.321	.286	3.577
GENDER.	1.201	.392	.274	.245	3.066

**i) Climbers' differ on Situational factors according to their Age.**

( $b=.32$ )

At the completion of the climb or on achieving their goal, differences were found between the age groups. In fact, it was the younger climbers' ratings that were more influenced by this stage than the older climbers ratings.

It seems then, that the younger climbers perceived that the group were more affected by the weather conditions,  $b=.30$ . This could have been because the younger climbers just lacked experience, and therefore, found it difficult to assess the weather conditions with any degree of accuracy.

**ii) Gender differences for Situation ( $b=.27$ ).**

Significant differences were found between boys' ratings and girls' ratings at this stage, ( $b=.27$ ). However, from the item breakdown analysis no locus of effect was found to provide any further illumination.

**(d) Retrospective Appraisals over the climb as a whole.**

**Table 9.44a. Retrospective Situation Scores.**

	B	SE B	Beta	Part Cor	T
WEATHER CONDS.	1.501	.280	.556	.458	5.362
GROUP STATUS.	-1.665	.379	-.506	-.575	-4.395
COMMITMENT	.473	.234	.207	.173	2.022

**i) Weather Conditions differ, ( $b=.56$ ).**

Instructors' prior ratings of weather conditions were the major differentiator of climbers' in their perceptions of the group, ( $b=.56$ ). Surprisingly, the self analysis had failed to discern any similar influence. From the breakdown analysis the locus of effect was the climber's current assessment of Weather Conditions  $b = .32$ .

**ii) Groups with or without a leader differ, ( $b=-.51$ ).**

One would expect the group status' to be revealing here. Climbers in groups without a leader saw their groups as reacting differently to the climb from those with an adult leader and the locus of effect was Route difficulty, ( $b = -.31$ ) where the leaderless groups were seen as finding the routes much easier than those accompanied by an adult leader.

### **iii) Commitment differences (b=.21).**

The greater the instructor's assessment of the climber's commitment to the climb, the less that the climber saw group concern for the difficulty of the route, (b = -.35). This could have repercussions as the climb develops if the climbers' evaluation on behalf of the group is likely to be biased in such a way that a dangerous situation could be encountered by taking a route more difficult than the group could cope with. Climbers in poor physical condition for instance would be particularly at risk. The link here with risk is a positive one because competency is bound up with how climbers view the climb, for instance the more competent the group members the easier the climb is viewed. However, the difference is that competent groups can cope with the difficult climb, while committed groups only think they can. This does not mean that climbers or groups cannot evaluate their situation. It only means that climbers and groups are more willing to apply themselves to succeed. This is important too, because every climber and group needs a commitment to complete the climb successfully.

### **e) Non-Significant Differentiators.**

On the whole, as found throughout this study, the explanatory variables ability, experience, fitness, risk level had very little discriminatory role in the climb. It seemed to make no difference whether this was the view of the individual or that deemed to be of the 'group'. Nor did group experience or type of school differentiate climbers' estimates.

### **f) Summary**

A limited range of explanatory variables differentiate between the various needs and demands of the climb at different stages, namely, gender, group status, commitment, weather conditions and age.



### **9.3. CAN CLIMBERS PREDICT THEIR PERCEPTIONS OF THE GROUP DURING THE COURSE OF THE CLIMB?**

#### **9.3.1. Incentive Predictions.**

It is obviously useful to know how fellow members of one's climbing team are going to be reacting later in the climb. Equally, it should be unsurprising if such proxy forecasting were very difficult. Jones (1974) found that interacting-type activity prediction accuracy was only 35%, while Gill's (1984) laboratory controlled study, where ability composition was manipulated, obtained similar findings, - predicting only 58% of the variance of future individual performance and 41% for group performance predictions. Gill concludes, "In light of the variability of both individual and group motor performance, one should not expect more than a moderate, positive prediction " and confirms the difficulty facing the climber by adding, " Quite likely, sport performance, which is subject to numerous influences that could be controlled in the lab., is even less reliable or consistent." However, the present issue is not so much accuracy as consistency in the kinds of views that climbers might hold over the various stages of the expedition.

So then what can one expect from the climbers? Certainly no greater accuracy than from the findings cited above. However, predictions should show that the individual is both aware of the requirements of the group and has been cognisant of the safety side of the expedition as well as the achievement side. Future outcomes, knowledge and experience, will be based on the accumulated right or wrong evaluations made, which with adjustments as the climb progresses, should enable both the individual and the group to achieve their goal.

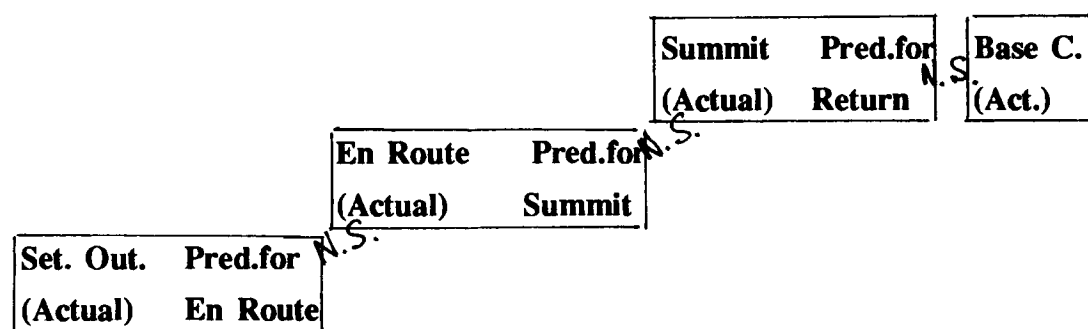
In order to answer the general question " can climbers predict their perceptions of the group during the course of the climb? " the climbers' perceived group ratings at the next stage (en route, summit and so on) were examined to see how well they could be explained by predictions

made by climbers themselves, at each preceding stage.

It is worth stating again that the predicted responses were obtained immediately after the actual responses. The questions asked the individual to look ahead to the next point on the climb, which would represent a significant part of the journey completed, and assess how the group would feel and what would then seem important to them.

In Figure 9.32., the predicted values are set against the actual values obtained at the next stage.

**Figure 9.32 Incentive links across the climb.**



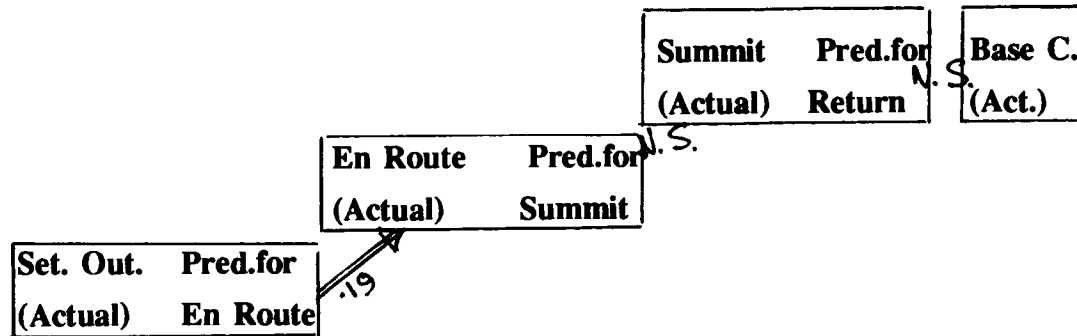
There were no significant incentive links between predictors and actual scores at any of the stages. Thus climbers had no reliable idea about how they were going to feel about group incentive characteristics at the next stage.

### **9.3.2 CLIMBERS' PREDICTIVE PERCEPTIONS OF THE GROUP ON RISK ACCEPTANCE.**

In this section, the parallel task is to examine risk acceptance were the major determinant of the predictions climbers were making about how their group would view risk once the climb was significantly under way?

Figure 9.33 shows how predictions for risk acceptance link with actual ratings on arrival at the next stop in the climb. It can be seen that, as far as incentive, predictive power is weak or absent.

**Figure 9.33. Risk Acceptance links across the climb**



**a) Perceived group predictions for en route and en route actual.**

The link between predictors for en route and en route actual was significant though not large, at  $\beta = .19$ .

**Table 9.45a Perceived Group Risk Acceptance Scores at "En Route"**

	B	SE B	Beta	Part Cor	T
PRED.EN ROUTE	.186	.108	.194	.137	1.721

These predictions make their main contact through willingness to accept risk ( $\beta = .42$ ) and importance of control ( $\beta = .28$ ). Thus climbers' at this stage were able to predict later risk acceptance scores with some degree of consistency.

**b) Predictors for the Summit and Summit Link.**

There was no significant link between predictions for summit and summit actual, ( $b = .15$ ;  $p = .08$ )

**(c) Predictions for Risk Acceptance Retrospective to the Climb.**

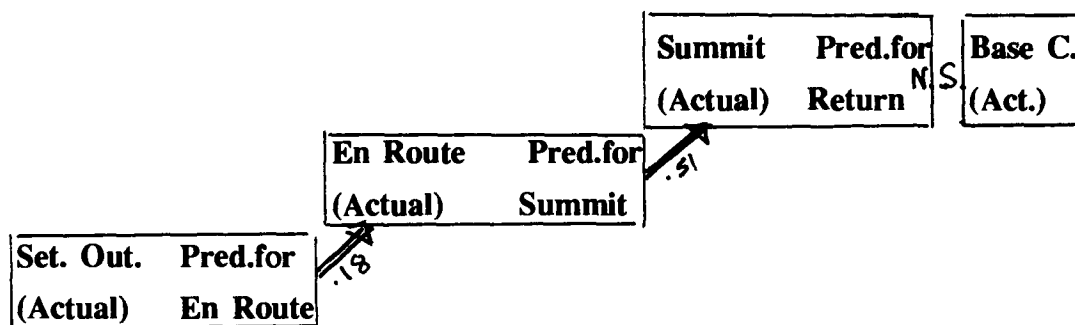
The link between predictors for the summit and retrospective actual was not significant either, ( $b = .18$   $p = .06$ ). The picture generally for risk acceptance, as for incentive is that climbers make relatively poor estimates of what their perception will be of the group view at the next stage.

### 9.3.3 SITUATIONAL LINKS ACROSS THE CLIMB FOR CLIMBERS' PREDICTIVE PERCEPTIONS OF THE GROUP.

The climber was asked to predict the group's assessment of the effect of three Situational factors during the climb. Analogously with Incentive and Risk the findings should give some indication of the climbers' ability to foresee the group's possible shortcomings and whether they could evaluate the demands of the developing climb, taking into account, the prevailing weather and route conditions.

Figure 9.34 shows how climbers' predictive perceptions of the group's incentives link with their ratings on arrival at the next stop in the climb. The results are presented in the same pattern as for incentive and risk.

Figure 9.34. Situational links across the climb.



a) Table 9.46a Situation Scores "En Route"

	B	SE B	Beta	Part Cor	T
PRED.FOR EN ROUTE	.172	.092	.181	.173	1.873

#### a) Predictors for en route and en route actual link.

Once again the link between predictors for en route and en route actual though small was significant at beta = .18. This indicates that the predictions made at the beginning of the climb about the Situation at this second stage showed that the perceived group were able to estimate the effect on their situation with at least some consistency. although the item link there was, physical condition.

**i) Weather conditions,  $b = .26$ .**

The locus of effect obtained from the Item Breakdown Analysis was the weather conditions,  $b = .26$ . Thus the climbers' best single-item estimate of the overall situation prediction of what the group's view would be, was the weather conditions item.

**b) Table 9.47a. Situation Scores at Summit.**

	B	SE B	Beta	Part Cor	T
PRED FOR SUMMIT	.486	.076	.514	.511	6.387

As shown in Table 9.47a the predicted ratings for Summit linked significantly with Summit actual ratings,  $b = .51$ .

The loci of effect were physical condition, ( $b = .27$ ). and route difficulty, ( $b = .41$ ).

**c) Predictors for return/retrospective appraisals.**

The link between predictors for the summit and retrospective actual was not significant, ( $b = .02$  ( $p = .82$ )).

**CONCLUSION**

From these findings it seems that climbers had difficulty in predicting group views on incentive and to some extent risk acceptance scores, but were much more likely to predict successfully what their situational scores for the group would be. This seems to point to the possibility that direct contact with the environment gives climbers a better insight to the likely happenings ahead. This is an important factor in climbing, because evaluation of the developing climb is paramount for ultimate safe completion of the climb.

Once again, predictions made by the individual of the group's perception of the situation showed an entirely different view from that of the individual alone.

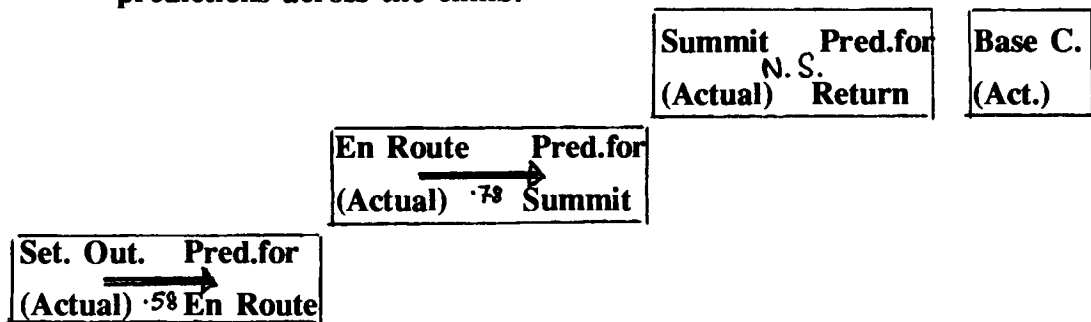
## 9.4. WHAT LIMITS CLIMBERS' ABILITY TO PREDICT THEIR PERCEPTIONS OF THE GROUP OVER THE CLIMB?

### 9.4.0. Limits on predicting group ratings.

What limits climbers' ability to predict how the rest of the group will perceive or feel about their status at the next stage? First, the equivalent data for these proxy data are shown in Figs. 9.35, 9.36, and 9.37. The solid line denotes relevant links with this section of the study while the dotted line denotes overall climber-rated links.

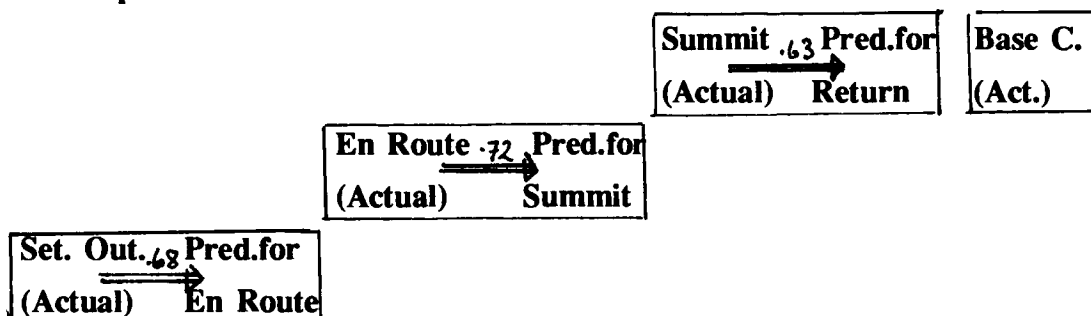
### 9.4.1. INCENTIVE LINKS.

Figure 9.35 Incentive rating links with the perceived groups' predictions across the climb.



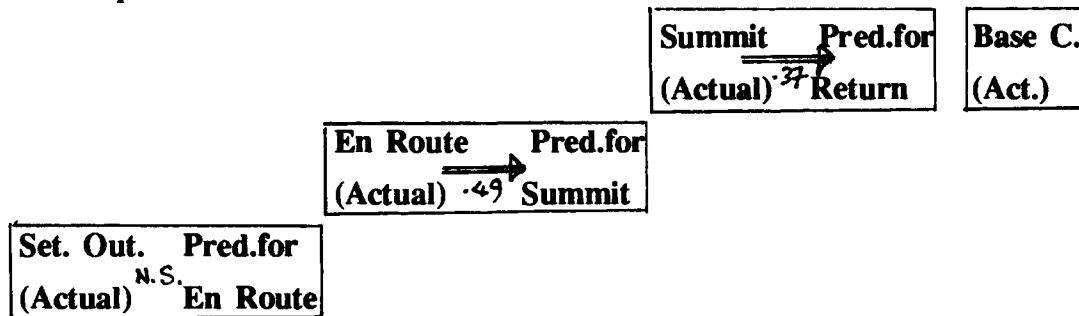
### 9.4.2. RISK ACCEPTANCE LINKS.

Figure 9.36. Risk acceptance rating links with the perceived groups' predictions across the climb.



### 9.4.3 SITUATIONAL LINKS.

Figure 9.37 Situational rating links with the perceived groups' predictions across the climb.



It can be seen that the same pattern as for the self data is found here, only to a more marked extent, in the sense that a very strong within-stage link is followed by a generally weak (non-significant) predictive link. And as with the self data, this statement is most true with respect to the incentive and risk ratings. For situation ratings the pattern of prediction coefficients while not impressive is at least as good as the pattern for the within-stage links. So this is some confirming evidence that situational items - Physical Condition, Route Difficulty and Weather Conditions are easier to predict than the incentive and risk items.

# CHAPTER TEN.

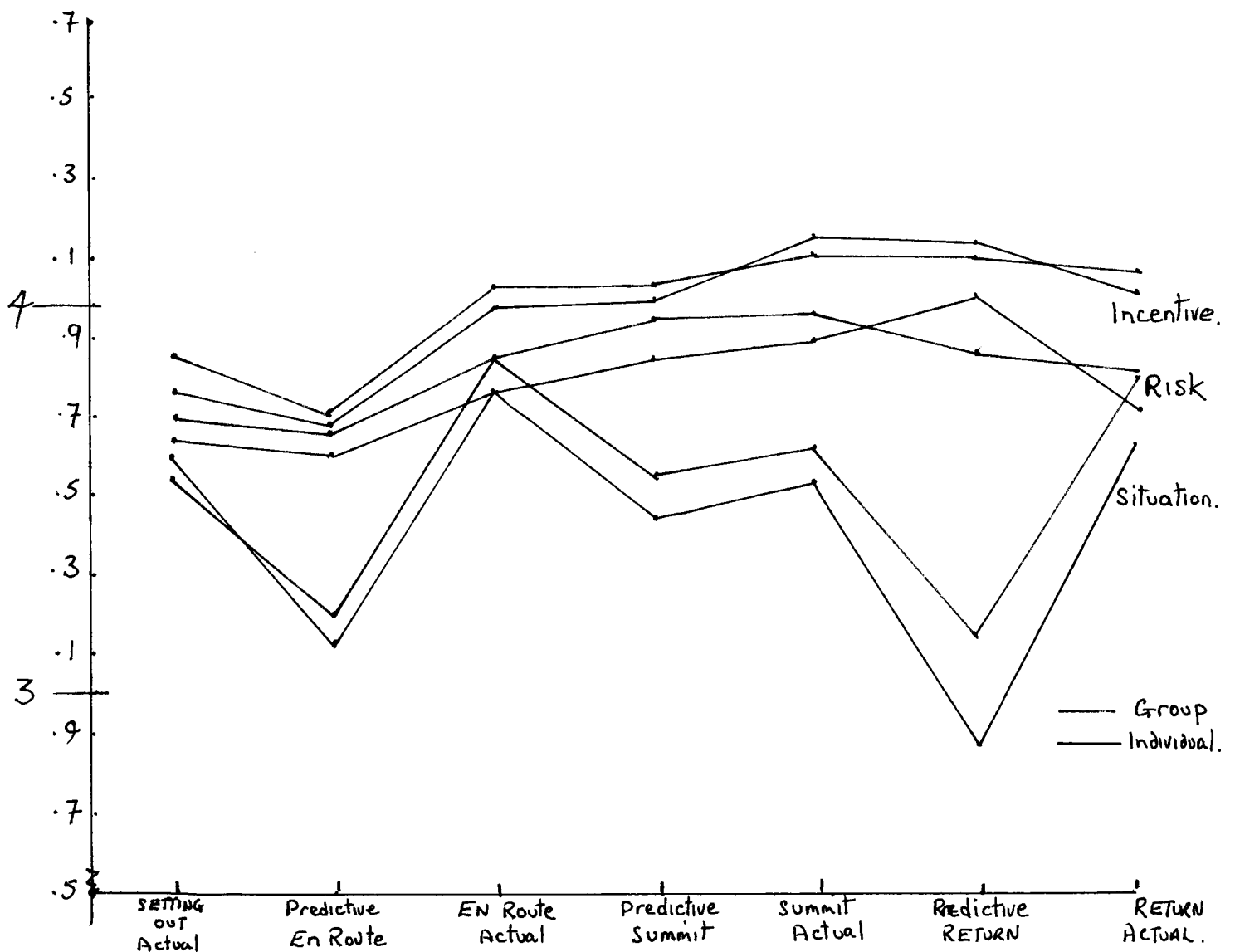
## SUMMARY OF FINDINGS.

Two kinds of data are summarized here: first, trends in mean ratings over the course of the climb, and second the regression links among these same sequential measures.

### 10.1. MEAN TRENDS.

Figure 10.01.

Comparison of Individual and Group (Mean Ratings) for Incentive, Risk and Situation.





### **10.1.1 INCENTIVE - INDIVIDUAL AND GROUP.**

The trend for individuals throughout the climb was for the importance of Incentive to increase with slight decrease on the Return stage, although here incentive was still stronger than at the Setting Out stage but similar to the 'En Route' stage. The group mean responses followed a very similar pattern to the individual mean responses. Predictions of responses to be made at the next stage were always lower than the actual ratings except at the Return stage. Perhaps the most interesting finding was the way in which both individual and group incentive ratings increased in strength as the climb progressed.

### **10.1.2. RISK - INDIVIDUAL AND GROUP.**

The pattern here is similar. Risk ratings, gradually increased as the climb progressed dipping after the top had been reached. For most of the climb the level for the group responses was higher than that of the individuals. Another noticeable similarity with the Incentive findings was the trend for the predictive ratings to underestimate actual levels at the next stage.

### **10.1.3. SITUATION - INDIVIDUAL AND GROUP.**

Again similarity between the two graphs is the striking feature. One would expect some variation in trend over the climb, because there will be changes in the weather and variation of the terrain which will interact with the changing physical condition of each person and group. The variation in ratings indicate that the individual and the individual's perceptions of the group are responding synchronously to the variations in Situational factors. What is difficult to reconcile in these findings is the inability of the individual to predict the conditions at the next stage. One would have thought that being immersed in the environment would have given the climber an insight into the conditions ahead. Whether this inaccuracy of prediction is a matter of judgment or whether at the next stage conditions in fact altered unexpectedly can only be conjectured. Although for situational ratings the pattern of prediction coefficients while not impressive was at least as good as the pattern for the within-stage links. The overall responses by the climbers at the Return stage point to

some understanding of the importance of the weather conditions (Situation) to the success of the climb.

A comparison of the trends in mean ratings of the three concepts, Risk, Incentive, and Situation over the stages of the climb both for the Individual and the Group highlighted three main findings:

1. that there was a general heightening (increase in incentive and risk acceptance levels) as the climb progressed.
2. that the predictions of responses for the next stage were consistently underestimated.
3. that the mean ratings perceived as holding for the group were consistently higher than the Individual mean ratings throughout the climb.

## **10.2. REGRESSION ANALYSIS.**

For the purpose of this comparative summary, results are presented only in terms of the overall factors, Incentive, Risk and Situation.

In Fig.10.02a the diagonal represents the seven assessments made during the climb, from starting out to return. The left hand side shows the instructor variables and their link with the various stages of the climb. For clarity, the right hand side shows separately the links among the questions asked on the climb. Figure 10.02a concerns Incentive. For this summary only significant regression pathways are shown.

### 10.2.1 a) INCENTIVE DATA (Self Ratings)

Fig. 10.02a. Regression coefficients for the individual climber's estimate of own Incentive levels.

Instructor  
Variables.

GENDER

AGE RANGE

EXPERIENCE

ABILITY.

FITNESS.

COMMITMENT.

RISK LEVEL.

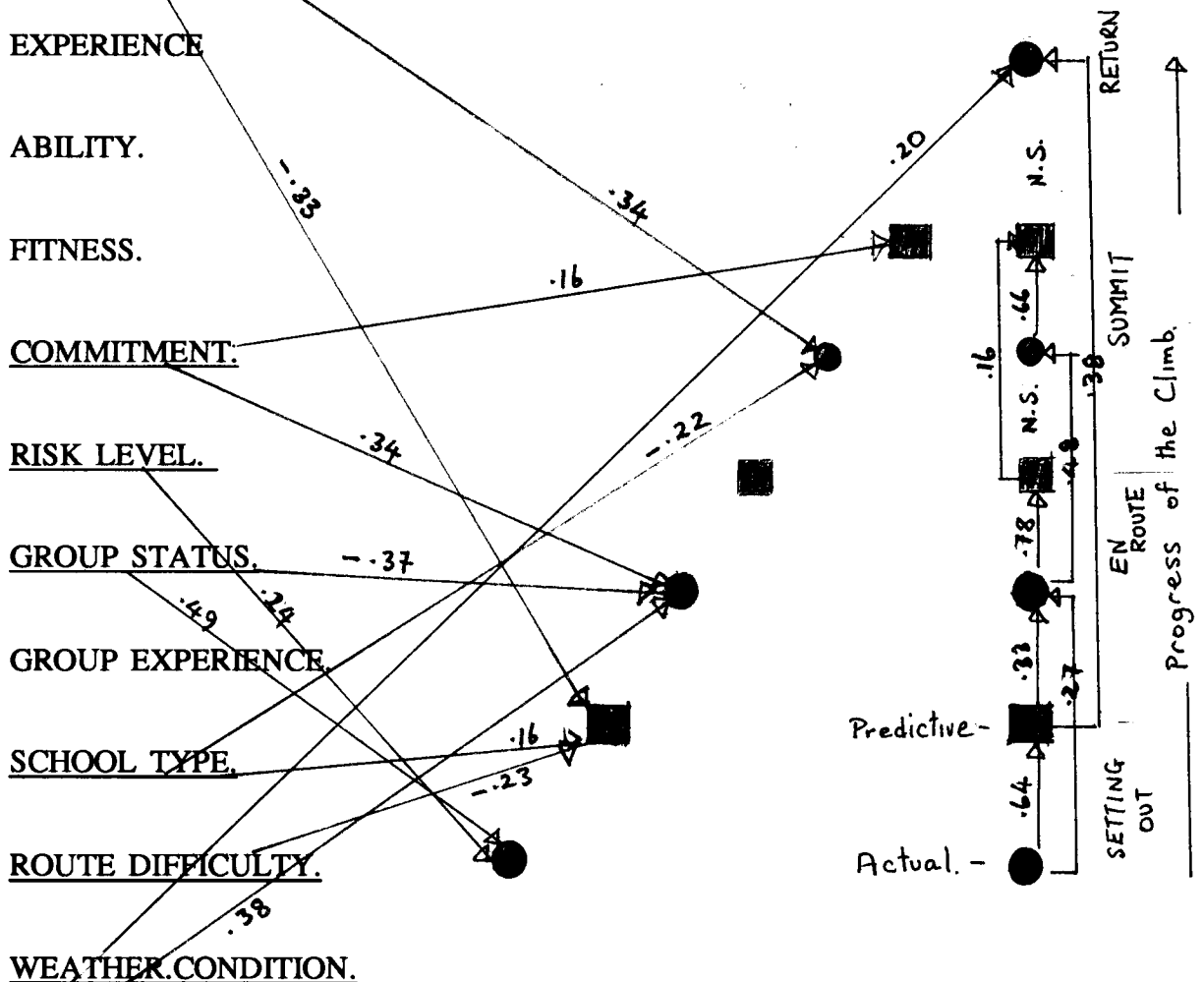
GROUP STATUS.

GROUP EXPERIENCE.

SCHOOL TYPE.

ROUTE DIFFICULTY.

WEATHER.CONDITION.



### DEPENDENT VARIABLES BY OCCASION.

Figure 10.02a shows the pattern of regression coefficients obtained. The left hand column lists instructor variables which then projects on to the stages of the climb from setting out to return.

For clarity of interpretation the 'climber-rating' paths have been summarised as a separate model on the right hand side of the Figure.

#### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

One would always expect a clear linkage between the prediction of how the next stage of the climb will be and the actual evaluation as it turned out, thus demonstrating that useful prediction was possible. In fact, as the model shows, throughout the climb the linkages are generally stronger between measures taken at the same time namely "actual" and "predicted for the next stage". In other words, predictions seem captured by feelings and evaluations at the time of the rating, as though climbers are not able to dissociate and project forward sufficiently. It may be noted here that this is a pattern which recurs throughout the obtained models, for group as well as individual data and for the Risk as well as the Incentive concept.

#### **ii) INFLUENCES OF INSTRUCTOR-RATED VARIABLES.**

The instructor-rated and additional classifying variables are arrayed on the left of Figure 10.02a. For this summary it is only possible to pick out particular features of the interlocking pattern of influences for comment. Some elaboration can be made in a comparison between the kind of patterns emerging from the individual perspective and that individual's perspective on how the rest of the group see things.

It is useful to outline the variables that turned out to be operative as climbers started from base, moved en route to the top and completing the return leg to base. No instructor-rated variable was operative throughout the whole climb, though several including whether the group had an adult leader and sense of commitment had a role at two separate stages. Other instructor or classifying variables such as age, ability and, surprisingly, fitness and experience never entered the explanatory picture. Figure 10.02 also shows that instructor variables could enter at quite different stages in the climb, and some sense can be made of this. For example, as young climber on the expedition what was found to influence incentive, was whether or not accompanied by an experienced leader and second how risk accepting they were. The leader factor was still of influence at the en route phase, with level of commitment, also now that

the climb was launched, becoming, an influence on incentive. Weather conditions were also taken into account at this point, though weather conditions entered as an instructor variable mainly on the downward climb.

Individual responses taken on the summit varied for males and females and for type of school i.e. grammar or secondary.

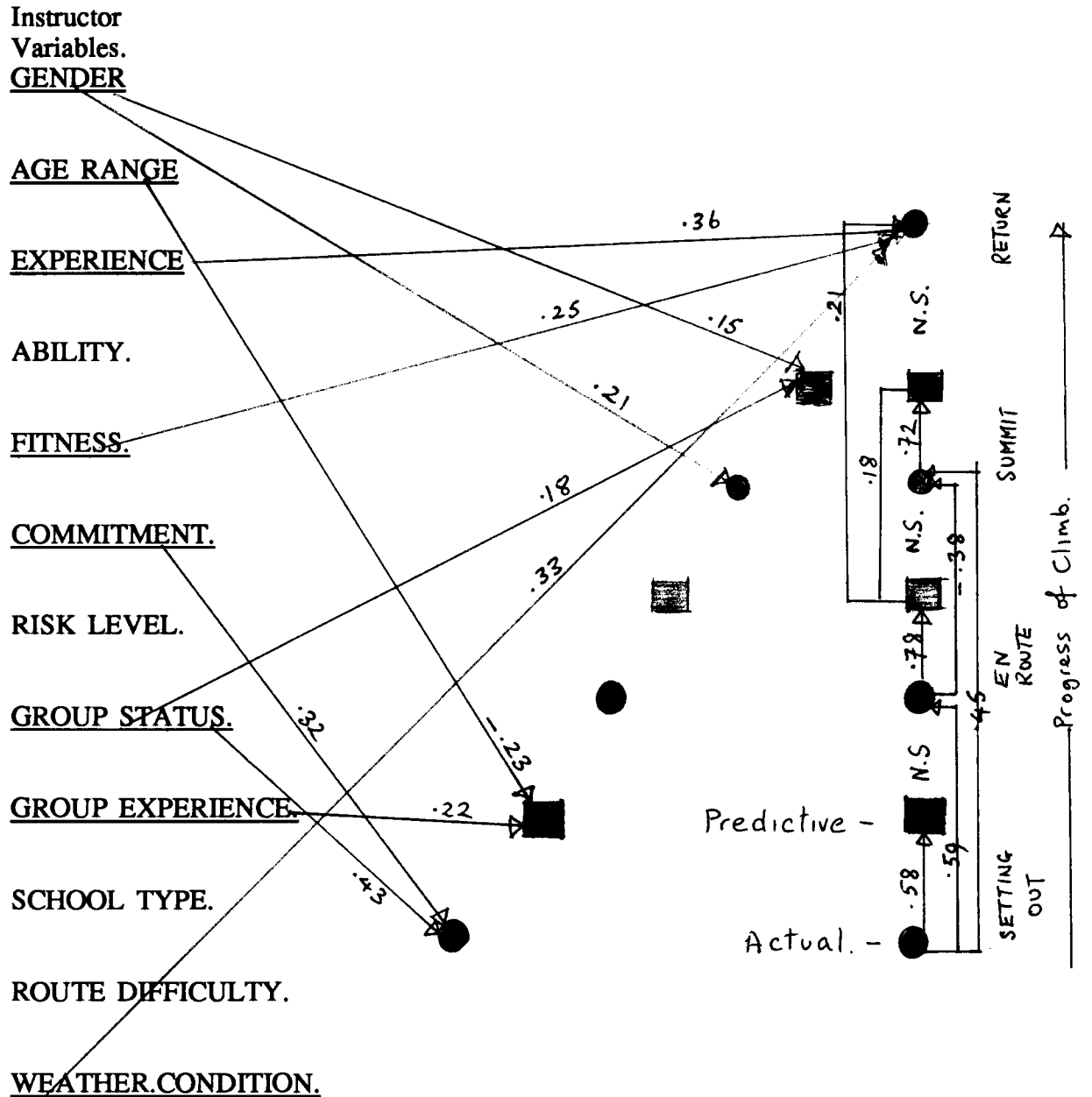
Prediction is the next theme where responses predicting the individuals' feelings and reactions at the next stage will highlight influences that are of imminent concern to them and give some insight into their forward evaluation. At starting out, their type of school and their age influenced predictions for the first leg; these had not entered the instructor picture for the Actual responses at starting out; nor was being with an experienced leader a factor in their predictions. Surprisingly predictions of how people would feel on the summit were not separated by any of the instructor variables, although commitment showed briefly.

In sum, therefore, a non-sequential pattern is found linking the present (Actual) and future (Predicted) ratings, with different instructor-rated variables entering and leaving the picture for different stages of the climb. Various features of these individual data will advance or recede in importance as the examination proceeds of how the individual climber views what is happening in the group during the same stages of the climb.

**10.2.1 b) THE INDIVIDUAL'S VIEW OF FACTORS IN THE GROUP AS A WHOLE.** Although the term group data will be used throughout this section, it will be remembered that this is always shorthand for "how the individual perceives the group's view", and does not refer to some aggregate of individual climber-ratings.

**10.2.1. b) INCENTIVE DATA - How climbers' perceived the rest of the group.**

**Fig. 10.02b.** Regression coefficients for the individual climber's estimate of Group Incentive levels.



**DEPENDENT VARIABLES BY OCCASION.**

Figure 10.02b shows the pattern of regression coefficients obtained and summarises the climber-rated path model.

#### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

Again "climber-rated" variables are shown to the right in Figure 10.02b. Certain broad similarities between these group and the individual data for Incentive in Fig. 10.02a, become immediately obvious. One is the absence of any connection between forward predicted and actual ratings. This goes with strong connections between measures taken at the same point in time. viz: .58,.78 and .72. Third, there are again examples of links between successive pairs of Actual-ratings i.e. bypassing the predictive estimate. There are also two examples of long reaching paths from starting out (Actual) to summit (Actual) (.45). and from en route-(Predicted) to retrospective (Actual) (.21). It seems that the experience obtained 'en route' be it physical or emotional is important, because this period in the climb seems to dominate the climbers' thinking especially when retrospectively appraising the overall climb.

#### **ii) INFLUENCES OF INSTRUCTOR VARIABLES.**

As comparison between Figs 10.02a and 10.02b makes evident, the instructor variables are considerably less differentiates for the group data, and the fact that an instructor variable is active for the individual data by no means guarantees it will be active for the group data. Therefore, at a general level, we may infer that young climbers are able to adopt a view of the group which is different from that of themselves as individuals.

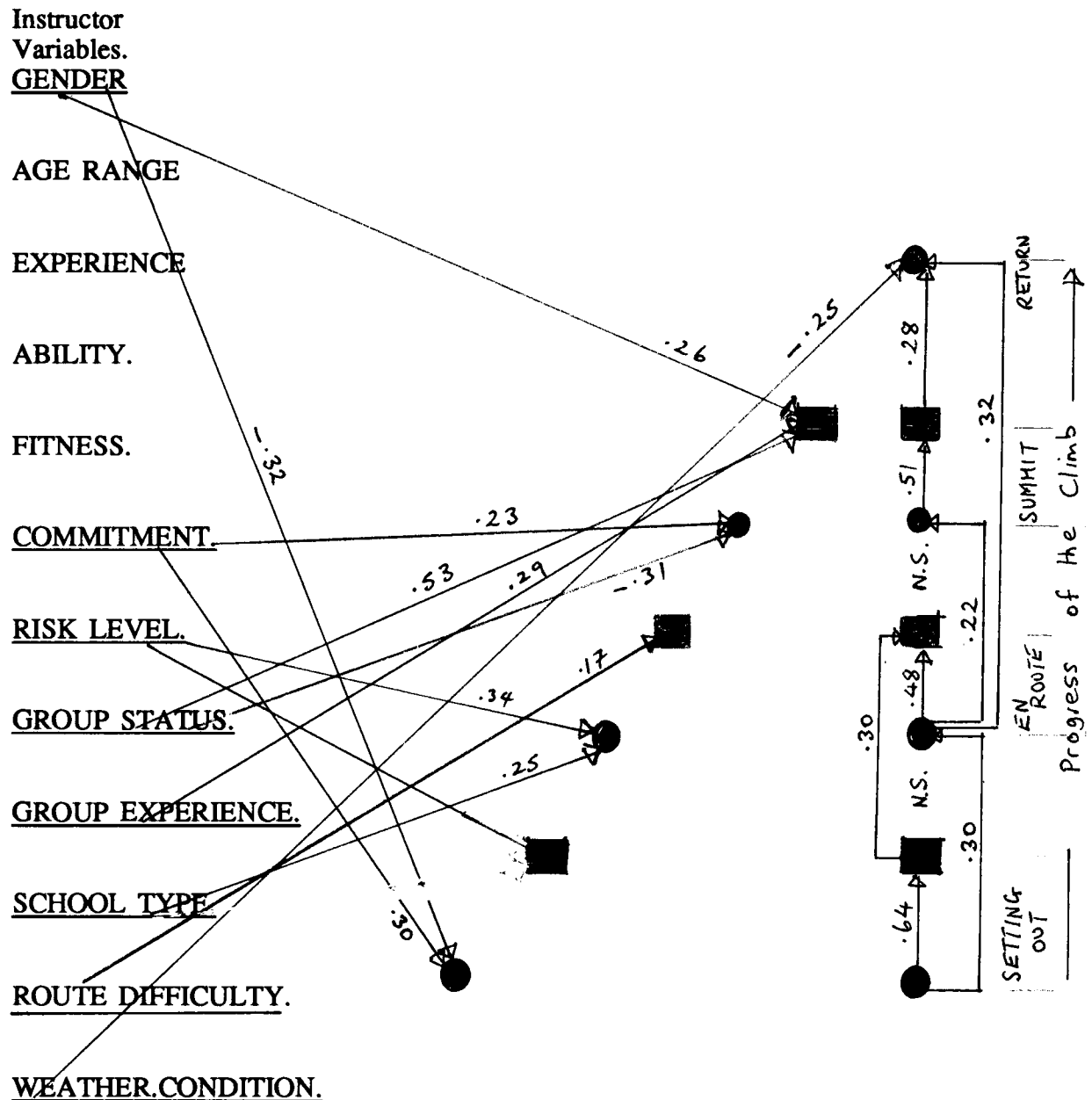
Both this similarity and difference can be seen at the first stage of starting out. Here, as with the individual data, whether the group has an adult leader is a factor. However, whereas rated commitment (.32) and group status (.43) influence perceptions of the group at starting out (Fig.10.02b), they did not influence self perception (Fig.10.02a). Again on the difference side, sense of commitment is seen as a very early group factor, whereas it was not perceived so until the en route stage in the individual data. Very little activity in the instructor variables is then evidenced until the summit and return leg. Type of school does not feature as an influence for the group data.

As Figure 10.02b shows, different influences on group ratings due to the amount of experience and physical fitness of the individual occur late in the climb, and one would probably expect these influences at this point rather than earlier.



### 10.2.2 a) RISK DATA (Self ratings)

**Fig. 10.03a.** Regression coefficients for the individual climber's estimate of own Incentive levels.



### DEPENDENT VARIABLES BY OCCASION.

Figure 10.03a shows the pattern of regression coefficients obtained. The left hand column lists instructor variables which then projects on to the stages of the climb from setting out to retrospective.

Again for clarity of interpretation, the 'climber-rating' paths have been summarised as a separate model on the right hand side of the Figure.

#### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

The paths of the climber-rated variables for the Risk ratings follow a very similar pattern to those of the Incentive ratings. This is especially so with regard to the link between the actual ratings and the predicted, with .64,.48,and .51 respectively through the climb. As with the Incentive data just one of the predictor variables linked significantly with the actual responses at the next stage, showing that it was a more difficult task than at first envisaged, with successful predictions only possible at certain times and under certain conditions. In general, the strong paths are between actual measures or between predictor measures, rarely from predictor to actual.

#### **ii) INFLUENCES OF EXPLANATORY VARIABLES.**

It seems that at the start of a climb boys and girls react differently in their evaluation of risk (.32), but once the climb has begun it is no longer an influence. Girls may be slightly inhibited in their initial responses but willing to accept whatever arises once the expedition is under way. Or perhaps the boys in the presence of the girls are willing to reduce their expectations. The level of commitment also differentiates at this stage.

Risk Level as an instructor variable is the rating of the climber by the leader before the climb began, and can be viewed as a personality-type measure. It therefore becomes an interesting variable in conjunction with the individual climber's own ratings of risk acceptance during the climb. A general influence which might have been expected is that personality riskiness would determine risk acceptance throughout the climb. However, its influence is confined to the first leg. Once the individual had reached the top whether or not the group had an experienced leader made a difference to the risk they were prepared to undertake. When the individual had returned to base the only instructor variable to be of influence on retrospective risk evaluations was the

weather conditions. Thus, throughout the climb ability, experience and fitness had no influence upon risk ratings at any stage.

Concerning predictor measures, Risk was influenced in a much more limited way than Incentive. At en route, for instance, no instructor variable had any influence and only risk level and type of school attended were factors up to the summit. The return leg, however, brought three instructor variables into the picture, whether there was an experienced leader in the group, whether male or female and for the first and only time in all the analysis whether the climber was in an experienced group or not.

## 10.2.2 b) RISK DATA - How climbers perceived the rest of the group.

**Figure. 10.03b.** The Individual's Perception of the Group's Risk-Taking Readiness at the Different Stages of the Climb.

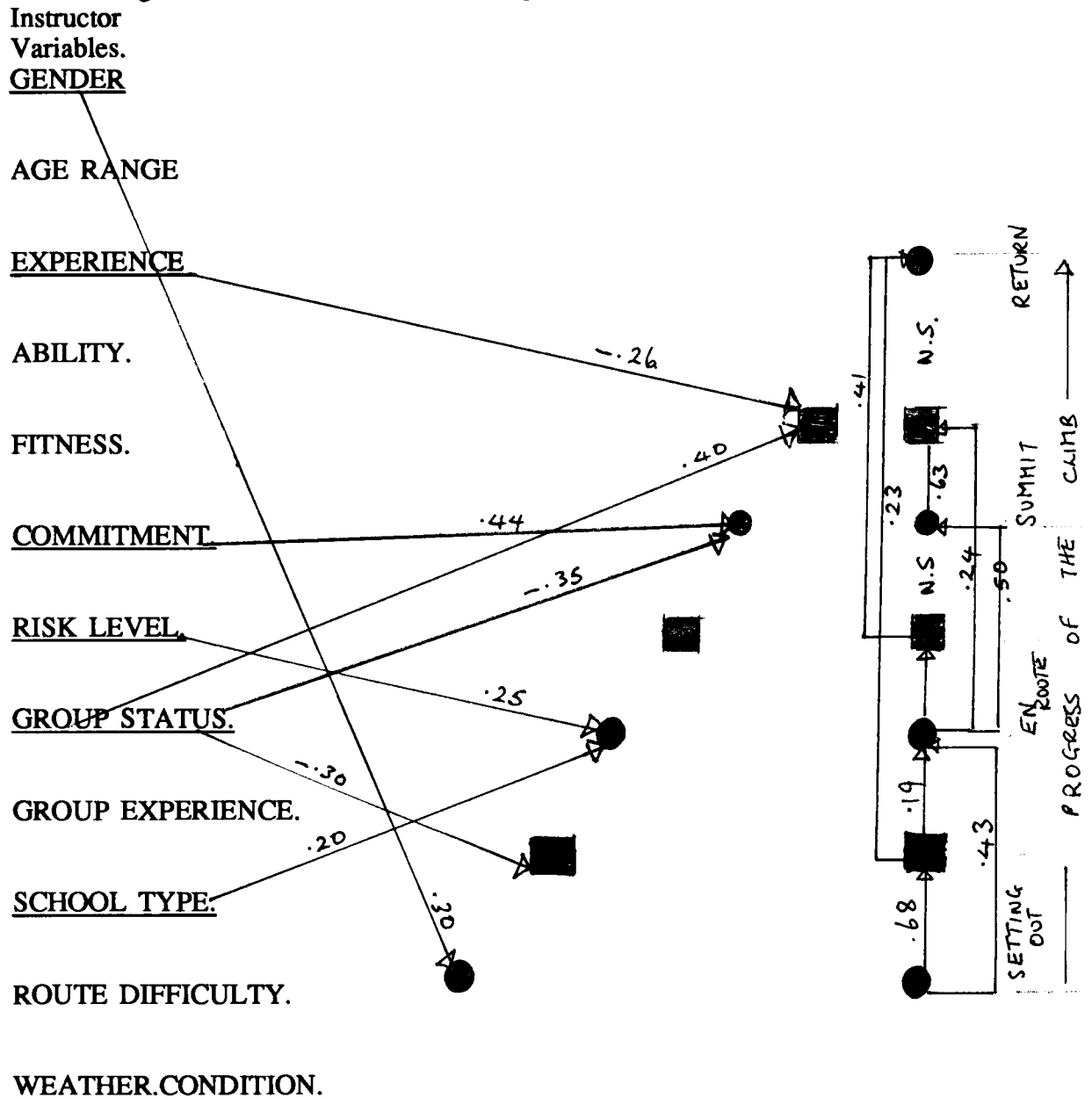


Figure 10.3b shows the pattern of regression coefficients obtained and summarises the climber-rated path models.

#### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

A similar path pattern to the individual climber-rated variables was found, yet with some noticeable exceptions. It seems in this group condition that setting out-predictions were significantly linked (.19) with the next stage en route-actual but also made a long link with responses made at base (.23) thus by passing all the other stages. This seems a feature of the analysis: successive pairs of actual ratings link together bypassing the predicted estimates, and also pairs of predicted estimates have links, sometimes again bypassing a number of stages.

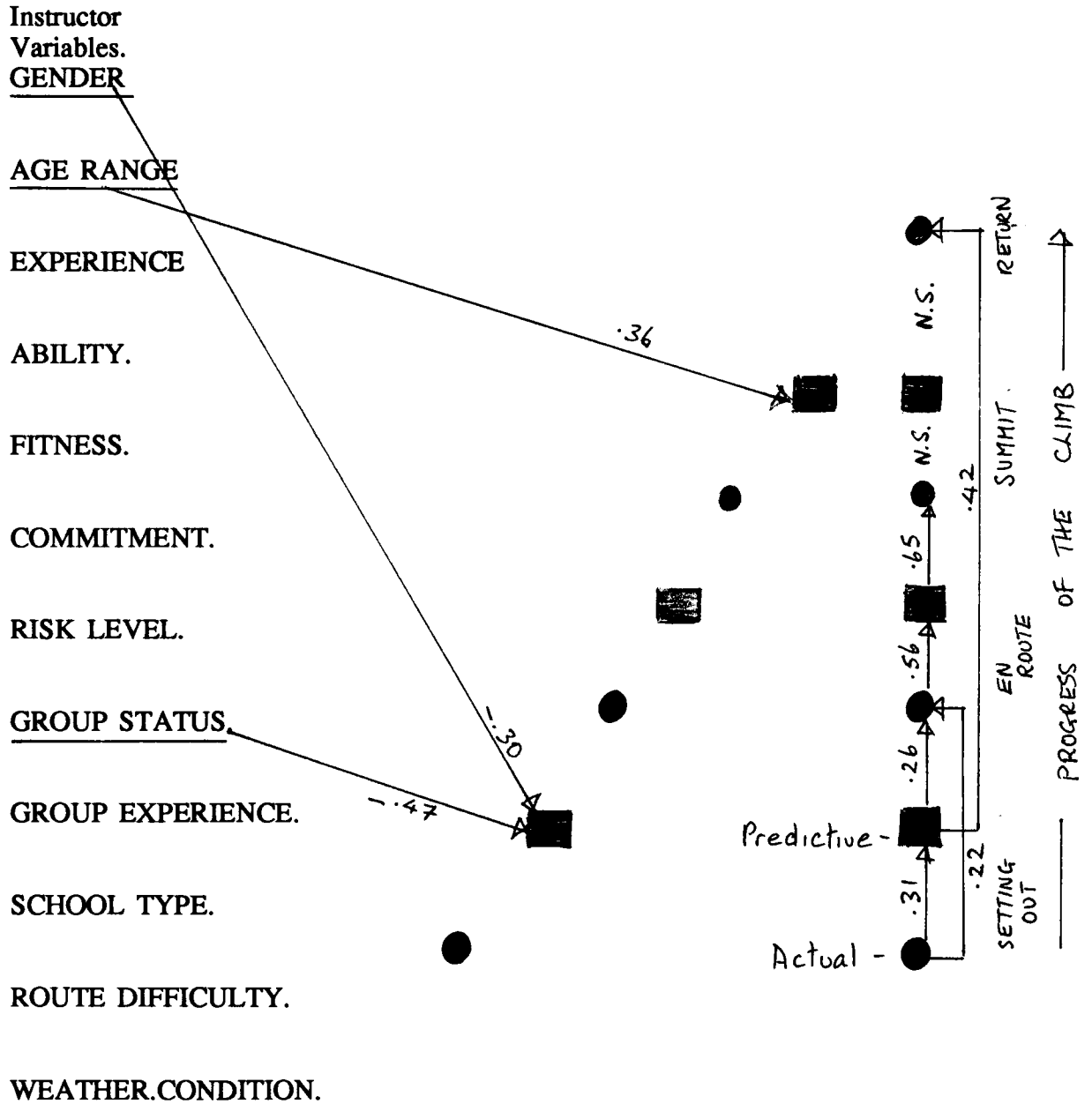
#### **ii) INFLUENCES OF INSTRUCTOR-RATED VARIABLES.**

In comparing Figure 10.03a with Figure 10.03b both similarities and differences emerge quite clearly. Thus, climbers are able to adopt a view of the group which is at least to some extent different from their own view of themselves as individuals. From the onset of the climb to the summit, similar operating variables for individual and group measure were male-female, risk level accepted, type of school, whether accompanied or not by an experienced leader and level of commitment. Variables operating differently for individual from group measures were: the level of commitment at the beginning of the climb, the influence of experience at the summit stage, and influence of weather conditions overall at base. For the predicted variables few similarities were found between individual and group. The main group influence during the climb was whether the group had an adult leader or not. The only other instructor variable of influence was the weather conditions when reflecting on the climb at base. As far as the group predictive estimates were concerned the instructor variables in general had little bearing.

**In sum**, both individual and group responses were influenced by classifying variables which one would associate with risk, (such as having an experienced leader, the level of commitment undertaken, whether male or female, risk level acceptable, type of route chosen and an appreciation of the variation of the weather conditions). It can therefore be inferred that young climbers are clearly responsive to the demands and effects of the climb on them as individuals.

### 10.2.3. a) SITUATION DATA (Self Ratings)

**Figure. 10.04a.** Regression Coefficients for the Individual Climber's Estimate of the Situation.



### DEPENDENT VARIABLES BY OCCASION.

Figure 10.04a shows the pattern of regression coefficients obtained and summarises the climber-rated path models.

### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

A number of researchers Endler (1973), Endler and Magnusson (1976) and Kane (1976) have examined groups and individuals in sport and point to an important interaction between the person, the performance and the situation. Certainly one would not deny that on the mountains, rain and strong winds can transform an easy climb into an extremely hazardous one in a very short time.

In discussing the trend of mean ratings for Incentive and Risk data the present writer expressed some surprise at the apparent lack of accuracy of predictions throughout the climb. However, for these Situational measures good serial links do exist between predictive rating and actual ratings for the first two stages of the climb (.26 and .65 respectively). No link occurred between predicted summit and actual retrospective which seems consistent with the findings throughout. Interestingly, the strong backward link between actual and predicted, another consistent feature of the findings, was not found between on summit Actual and summit Predicted. Nor was the usual sequential link between Actual ratings found.

In general, then, these results form into a more understandable pattern than was found for Incentive or Risk.

### **ii) INFLUENCES OF INSTRUCTOR-RATED VARIABLES.**

The instructor variables in the individual situation had very little discriminatory power throughout the climb. For the actual responses in fact no instructor variable at all had any influence. For the predictive responses there was some influence at the beginning of the climb e.g. whether an experienced leader was present with the group or not and whether the individual was male or female, and at the summit where the age of the group was of influence. There was no influence on the en route stage by any instructor variable. These findings in isolation would be very difficult to explain, although when one examines the 'group' responses the picture becomes clearer.

### 10.2.3 b) SITUATION DATA - How climbers perceived the rest of the group.

Figure. 10.04b. Regression Coefficients for the Individual Climber's Perception of the Group's Estimate of the Situation.

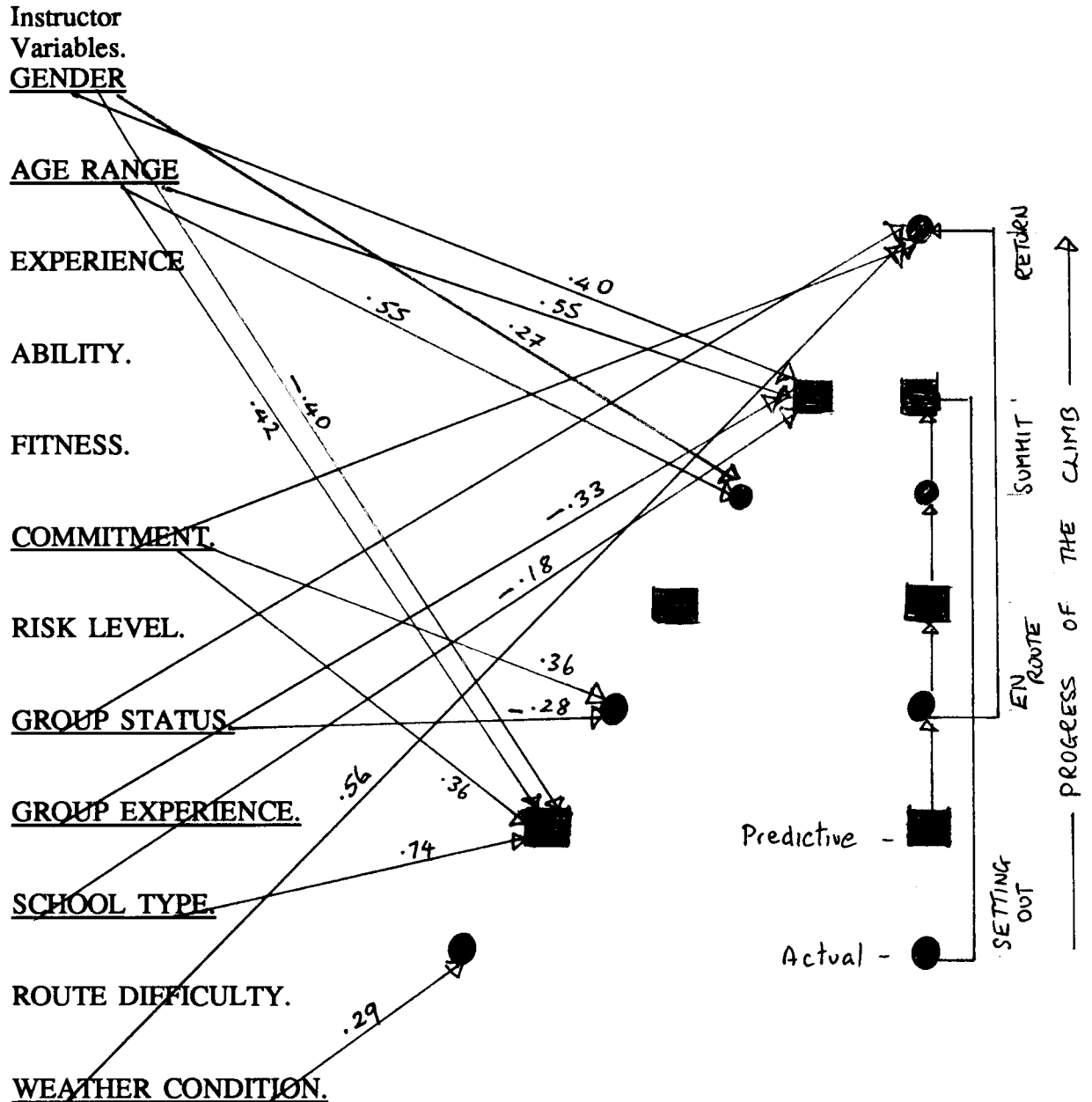


Figure 10.04b shows the pattern of regression coefficients obtained and summarises the climber-rated path model.



#### **i) INTERPRETATION OF CLIMBER-RATED PATH MODEL.**

Perhaps the first noticeable feature of this model is that, as for the individual data, paths do run from predicted to actual in simple serial sequence along the climb (.18, and, .51). Perhaps, as hinted before, it is easier to predict physical than psychological conditions. A second feature was that now no link was found between sequential actual responses. The third observation is that setting out-actual had no influence (link) with setting out predicted, in contrast to both the risk and incentive models, but had a long link to the summit-predicted. There was also a long path linking en route actual with the "Return" at base.

When one comes to make a comparison between Figure 10.04a and Figure 10.04b the differences are very evident. Certainly climbers were capable of differentiating group and self responses.

#### **ii) INFLUENCES OF INSTRUCTOR-RATED VARIABLES.**

The object of this outline of influences has been to open out and clarify a basic picture of the effect of the instructor variables on the individual's self and group responses across the various stages of an expedition or climb. Instructor variables are very active throughout the climb. This is in marked contrast to the few actual such variables from the individual analysis. At each occasion climbers are strongly differentiated on the basis of instructor or, better, classifying variables, e.g. age range, sex, group status, type of school, group experience. From the more subjective instructor variables only level of commitment and perceived weather conditions were of influence. By implication, the personal attributes of ability, experience, and fitness were of no influence on any situational measure. Nor were, route difficulty and the level of risk, two variables one would have expected to correlate highly with the situation measures.

These last results in many ways summarise the pattern throughout of discovering some results confirmatory of expectation, some disconfirmatory and some belonging to the special category of puzzling. All three broad concepts, Incentive, Risk and Situation, have had some similarities, but also a number of differences.

# **CHAPTER ELEVEN**

## **DISCUSSION OF RESULTS :**

### **11.1 CLIMBERS' SELF APPRAISALS.**

It may be useful to begin this chapter with a fundamental observation. The author - and quite possibly the reader - has a good knowledge of what it feels like to be a member of a climbing expedition, and at certain points in this presentation efforts have been made to convey the various feelings of exhilaration and disappointment, of camaraderie and apprehension that do convey the reality of the climb. This kind of account which invites us almost to hear the click of the buckles on the climbing gear has a compelling and immediate quality that can make one think for a moment that there is little else to be said.

However, it must be remembered that it is in fact only one kind of account - what might be termed the narrative or documentary account. In complete contrast a physiologist of exercise might describe the same climb mainly in terms of the dynamics of the autonomic and the cardiovascular systems. This is what we might term the clinical or medical account. Somewhere between these two poles fall the sociological and psychological accounts, and it is the latter of course which has been the concern in this thesis. All possible accounts can be thought of as being parallel and equally valid explanatory strands which taken together allow us to extract the maximum amount of understanding. It is worth remembering this because otherwise there is a danger of thinking that our own "psychological" version has somehow denatured the reality from which it claimed to start.

The psychological picture constructed in the preceding chapters is of a climber who has both a view of his own status and that of the group in terms of what we have been calling incentives, risk and situational appraisal. As the climber moves off from base camp a picture can be put

together which is partly composed of basic factual or biographical data about the climber (e.g. age; gender) and partly of judgments of another (the instructor) on such matters as climbing ability, risk level, fitness and so on. The question is then asked as to whether such variables differentiated climbers over the course of the expedition.

It turned out that rather few of these ways of describing climbers provided any pattern which could be traced over more than one or two stages of the climb. Further, their appearance in the explanatory picture was not always predictable or amenable to plausible explanation. Why for example did secondary modern school climbers when on the summit see the climb as more challenging than grammar school children - while also having a lower level of morale? And perhaps the most extraordinary findings of the study were that such explanatory variables as experience, ability and fitness had no significant influence on the climbers' incentive, risk acceptance level or situational ratings. In normal circumstances one would categorise these variables as having a major influence on climbers. In fact no instructor-rated variable had any influence on the situational factors, and given the nature of these factors (non-psychological; dissociated in time) this absence of relationship is very understandable. However, there were consistent effects, particularly whether the group was accompanied by an adult leader or not in its consequence for incentive. Clearly climbers with adult leaders viewed the expedition differently from those without.

A second category of indicators considered was of course the question asked of the climbers themselves rather than of an external observer. How able was the climber to assess current status in terms of the three key constructs of incentive, risk and situation? And how able to predict how these would move over each stage of the climb? Further, how did the individual climber see the group in which he or she was operating on these same dimensions? It was preferred to construct a picture at this molar level rather than attempt following correspondence over the four stages of the climb for some sixty variables. In making this preference, it was recognised that the constituent questions are only approximately described by the molar label. Also recognised was the

trade-off in loss of detail for this relative overall coherence. However, any "loss" was minimised by the fact that there were typically no specific theories relating to the individual questions themselves.

For incentive, the picture obtained was that reported incentive gained in strength as the summit was approached and then declined again in the retrospective measure. This finding is consistent with classical findings in both animal and human research that goal gradient increases as the goal is approached. Within the overall factor, the trend was clearest for goal realisation, morale, esteem and satisfaction items and least clear for challenge and cooperation during the climb. Intuitively consistent with this was the fact that the climber's willingness to accept risk also became greater with approach to the summit and then dipped in retrospective appraisal. Again within this general picture the trend was clear for the majority of risk measures but least clear for control and uncertainty. Situational factors varied as would be expected, but of particular interest was that the climber's perception of his physical condition seemed maintained by motivational drive up to the summit but deteriorated once the goal had been achieved.

We then considered the sequential linkage between climbers' appraisals of their position at successive stages. There is of course no necessary reason why there should be strong links. Each stage finds the climber in quite a different state in terms of general disposition to the climb, as the ups and down of fatigue, morale and climb difficulty exert their non-linear effects on the climber's current disposition. It may therefore not be too surprising to find that no completely stable pattern of influence occurs across the climb in either incentive, risk or situational concepts. It appears that the two most consistent incentive effects throughout the climb were goal realization and cooperation. Risk acceptance factors were generally stable with limited changes occurring at any one stage. During the climb ( en route and summit stage) the most consistent link was willingness to accept risk. As would be expected Situational factors changed very little across the climb. Only the climbers' physical condition remained a stable link, which is not surprising.

In some ways a more interesting question to ask about the links

between successive stages of the climb, and one of particular interest to those who organise climbing, is how effectively (accurately) a climber may sense what his or her status is going to be later in the climb. A preliminary point to make is that there was no objective index for accuracy. It could of course be maintained that it was not so much an objective as a subjective accuracy that was being sought, so that if a climber felt that, say, support from the group was lacking, then in this perceived sense it was in fact lacking.

There is also the likelihood that data becomes more "noisy" as fatigue sets in and/or conditions worsen. This is because in spite of exhortations the same care in ratings will not be taken in a freezing gale as compared with the warm lounge back at the Centre. It is also possible that the criteria for placing a tick on a given point of a rating scale vary as the climb progresses, so that for example, a cheerful group spirit may not merit much as the climb begins but may be very influential on ratings when it is looked for at frustrating points on the climb. With these constraints in mind we can consider how well climbers were able to predict ahead in respect of self and group status at the next stage of the climb.

As the climbers set out on their climb, incentive predictions for the next stage en route were found to be significant,  $b=.33$ . Here the link resided in goal realization and esteem. However, no significant link was found between these stages for climbers' feelings about the group. For risk acceptance the reverse was found, namely no significant link for the self analysis but a significant link though not large,  $b=.19$ , for the perceived group. For situational factors both self and perceived group analysis gave accurate predictions for en route  $b=.35$ , and  $b=.18$  respectively. Similarly accurate predictions for the summit stage were given,  $b=.65$ , and  $b=.51$ , although no significant links were found for the retrospective stage. Rarely were strong significant paths found for Incentive and Risk ratings factors; and this was also the case for perceived group data. Thus it appears from observation of the situational data that predictions for physical changes are somewhat easier than for psychological changes.

A general feature from the data was that stronger links were found between actual and predictive measures taken at the same stopping point than were found for predictive ratings and the actual for the next stage - which they were supposed to predict. The indication here is that some context effect was imposed on the predictive ratings by the prior actual ratings. However some predictive links were found even though these predictions also happened to be correlated with the simultaneous measure. Certainly one would expect some correlation to occur with measures taken at the same time but to what degree they bias climbers' predictions remains uncertain.

## **11.2. FURTHER EXAMINATION OF INSTRUCTOR-RATED VARIABLES.**

The results from these background variables, although making limited contact with the climbers' ratings during the climb, do have some interesting features worthy of further scrutiny.

### **11.2.1 Groups with or without an adult leader.**

One of the dominant effects, particularly in relation to incentives was group status, that is whether the group were accompanied by an adult leader or not. Differences were found in incentive at setting out and en route and in risk acceptance at the summit. Both kinds of group are natural groups operating in again natural surroundings, with group development evolving as the expedition progresses. This development is particularly the case for unaccompanied groups as they are still in the transitional stage of electing a leader or leaders when the climb begins. On the other hand, climbers in the accompanied group although led by an adult are also given the opportunity to lead and make decisions. The question is what are the consequences of having an adult leader in the group? Do the unaccompanied, often termed "self-reliant" groups, benefit from an emergent leader? As Carron and Chelladurai (1978) point out, leadership is an 'influence system' with an interactive exchange of influence in the process of leadership: the leader, the subordinates/group,

and the situation all have a reciprocal impact upon each other. Hollander and Julian (1969) discussing the leadership/ subordinate aspect of the relationship, observed that:

" the person in the role of the leader who fulfils expectations and achieves group goals provides rewards for others which are reciprocated in the form of status, esteem and heightened influence. Because leadership embodies a two-way influence relationship... the very sustenance of the relationship depends upon yielding to influence on both sides."

In the case of the accompanied group, the leader is not only in possession of legitimate power and expert power but also of reward and coercive power. The price for the group could be high with independent decision making denied them. On the other hand mistakes by the self-reliant group in hostile regions could also be costly resulting in injury or even death.

At setting out where differences between leader-led and leaderless groups were found one could ask the question: why should the presence of a leader have immediately set individual's morale and self esteem higher? The answer may lie in the fact that the mere presence of the leader getting the group under way and demonstrating support and experienced-based know how will enable the climber to feel good about getting started and convince him that it can be achieved. The group without such a figure will not feel quite so ready or sure of the road ahead.

While one can thus see immediately in this case that some advantage could be gained by having an adult leader present, one of the important aspects of an expedition is for the individual to be able to think for himself and make decisions independently of an adult leader.

However, independence is an important part of the learning process, and by the second stage, en route, climbers without a leader had higher goal realization ratings. In other words, now that they were under way, they themselves could determine the outcome of their climb. However, the contrast was not maintained thereafter, and incentive levels for accompanied and unaccompanied groups were generally similar for the rest of the climb.

No differences in risk acceptance were found between the groups at setting out, or en route. However at the summit groups not accompanied by an adult leader were found to be more certain of the outcome of the climb and also more willing to be supportive than groups with an adult leader. Obviously on reaching the summit the main goal of the climb had been accomplished but the climb itself was far from over as the return journey still had to be completed. The difference between the groups could lie in being able to make the choice of descent to the base camp. The groups without an adult leader probably discussed their intentions prior to reaching the summit and were not only sure of their actions but also ready to give support to any members of the group who were feeling the strain of the climb. Groups led by an adult leader would not be completely certain of their movements on reaching the summit as alternative routes could be taken. The leader would decide their course of action depending on the state of the party and the time of arrival on the top. The implications here are the more one includes climbers in the decision making process the more self sufficient they are going to be, which could mean that the climber benefits even more from the climb. When the groups had returned to the basecamp the basic similarity reasserted itself in the retrospective measure.

The overall implication then is that if groups with a leader react in most situations similarly to groups without a leader then, as Colin Mortlock (1984) has advocated, self-reliant adventures should be the norm for young people rather than the exception. Obviously thorough preparation and so on would still be necessary as both Needham (1984) and Mortlock (1984) emphasise.

#### **11.2.2 Gender differences:**

On the whole the differences between boys and girls in the present study were minor, so that incentive and risk acceptance and situational factors were for the majority of the climb similar for both girls and boys. There were some minor differences, for instance boys' incentive rating on the summit were higher than girls but the main difference of any note was found in relation to risk acceptance where girls lacked confidence



when they were about to set out on the climb. This however proved to be an isolated occurrence as the girls showed equal confidence with the boys once the climb got under way and then throughout the expedition. What is more, no differences were found between boys and girls concerning the situational factors showing that their awareness of the demands and consequences of the climb were similar.

It seems then that if girls' self-perception in the climbing situation is no different from the boys', girls' can work alongside boys with equal likelihood of success. Certainly the development of appropriate skills, knowledge of mountain principles, participation in major climbs, positive attitudes towards outdoor activities, enjoyment and satisfaction from personal achievements are not the sole prerogative of the male climber. Qualities of leadership, courage, determination, feelings of personal self esteem and many more attributes can equally be acquired by male or female climbers. Humberstone's (1986) research, with mixed groups demonstrated that, "by the end of their course, the majority of girls felt that the activities they had been involved in were equally appropriate to them and, what is more both girls and boys recognised that girls were as capable and competent as boys."

Although gender differences were found to be small, it does highlight the need for further specific, possibly, intervention research in this area. This of itself will not be easy judging by the findings from Ball's (1986) research report "Outdoors and Gender" where he found organisations such as the Sports Council and institutions like colleges, universities through to individual clubs, with the exception of riding, in outdoor activities were run and dominated by men. Very few women hold any post of responsibility and the likelihood of any immediate change seem small. The plea then seems loud and clear and echoed by Wetton, P. (1990) in her article "Give girls a chance," where she writes, - "Despite our increased awareness of equal opportunities, we still need to guard against denying girls the opportunities for physical development." This study then points the way for mixed groups to operate in outdoor activities and mountaineering with mutual advantage.

### **11.2.3. Commitment:**

Another noticeable feature of the findings is the consistent occurrence across the climb of the instructor- rated variable labelled commitment.

Certainly one would expect a committed attitude towards the climb from the climbers, and this would mean a strong expectation of accomplishing their goal even if at the same time the actual outcome was necessarily uncertain. Although the climber's incentive ratings were not differentiated at the commencement of the climb, once the climb was under way, the greater the prior commitment of the climber the greater the level of reported morale and cooperation. This is as expected: Wicklund, and Brehm (1976) point out that, "once a person has made a commitment he closes himself off to information that would have led him to alternative types of commitments." Here the climber then, is concerned with the positive actions involved in keeping the group together and maintaining its spirit having experienced the first leg and with the climb to the summit ahead. Goal realization might also be uppermost in the climber's mind as indeed might other personal incentives such as esteem and satisfaction but at this relatively early stage the practical incentives that might affect the group much more (morale and cooperation) need the greater emphasis to ensure a successful conclusion of the climb.

What would concern the instructor would be whether the climber's prior commitment would escalate the risk acceptance levels of that climber. Too high a prior commitment can lead to resistance to change when new information about the climb is being evaluated. Dissonance theory gives some insight here. Wicklund, and Brehm (1976) remind us, " the rational man is one who alters his opinion or behaviour in proportion to the evidence implied in each bit of incoming information .... evidence, evaluation and behaviour." Thus rational evaluation can be inhibited by the prior existence of too rigid a commitment. This can even lead the person to evaluate an event more positively even though the incoming information becomes objectively more negative. Brehm and Leventhal, Thibaut and Ross (1969), Nash (1950) Aronson and Linder

(1965) also point out how a person's perception and judgement of a situation or a person can be affected and regulated by commitment.

The implications that can be drawn from dissonance theory could mean that for climbers with high commitment judgements would tend to be irrational. Any such irrationality might show itself in the risk acceptance' data.

The risk acceptance findings in this study indicated that climbers' risk acceptance at setting out were in fact related to confidence and perceived mishap tolerance. It seems then that the greater the prior commitment ratings the greater the level of confidence. This is much to be expected as a positive attitude especially at the commencement of the climb would be the norm for most climbers, indeed would be the climbers tolerance to mishap. Thus climbers who are more committed to the climb than the norm would certainly have a very strong positive attitude to the climb. Risk acceptance by these climbers then could be seen as alarming where unacceptable risks might be taken without the climber realizing the possible consequences. However, by the time the climber reaches the summit the stronger the climber's prior commitment the greater the supportiveness of the climber. This again indicates the positive attitude of the climber but also emphasises the fact that climbers wants to ensure a safe outcome to the climb by helping others, perhaps those more tired than themselves. Clearly, instructors can expect an increase in risk acceptance to some degree from prior committed climbers and therefore they would need to be aware of how any escalation of risk might lead to climbers finding themselves in hazardous situations. Fortunately the indications from these findings are that the positive actions of the individual are directed towards the group.

#### **11.2.4. Risk Level:**

Those who were assessed by the instructor as being more willing to take risks were found to have higher incentive scores at setting out. This seems a reasonably acceptable finding and one in which instructors might need to take particular note, although risk levels were not influential at any other stage. In addition the higher incentive scores were related to higher morale at setting out, which could enhance good feeling

within the group and not pose any monitoring problems for the instructor.

The instructor rating of how much risk a given climber would take did differentiate the climbers' risk-related items though only at en route stage. Here the greater the prior assessment of riskiness the greater the climber's confidence, willingness to be supportive and certainty as to the outcome of the climb. Thus willingness to take risk, as perceived by the instructor could be seen as a personal variable that might well need some monitoring at the beginning of the climb but taken overall was in fact a favourable indicator in the success of the climb.

#### **11.2.5. Weather Conditions:**

Instructor's rating of weather conditions prior to the climb had an influence on the climbers' incentive at the first stop - the en route stage. The better the weather forecast had been the greater the goal realization score for those climbers. However, prior ratings had become of non effect by the summit, perhaps because of the very changing nature of mountain weather.

Risk acceptance in good weather showed that climbers were more supportive, unaffected by mishaps and saw less uncertainty in the climb. Whereas the latter two findings might seem obvious, the idea of climbers being more supportive in good weather conditions is not so obvious. Janis (1963) for instance found that group solidarity increased when people were exposed to external danger. One wonders if the individual is willing to be helpful and supportive because there is less pressure on him/her to cope with the climb itself with therefore more time for interaction.

Strangely instructor-ratings of weather conditions prior to the climb had no influence on the self situational factors, although they did on the perceived group ratings. Certainly a clearer picture could have been drawn if a relationship between instructor ratings of weather conditions prior to the climb and climber ratings made during the climb had been forthcoming.

Obviously climbers/walkers/skiers in very remote and rugged regions face serious consequences if they fail to evaluate their capacity and underestimate the weather conditions - an equation that needs to be correct. Initial importance lies in recognising that the whole venture is dependent on the weather. Enjoyment, challenge and success can all be bound up in the variations and rapid changes that occur in mountain weather systems particularly.

#### **11.2.6. Type of School:**

There were some differences found between secondary modern or grammar school children, although these were minor taken across the climb as a whole. Grammar school pupils differed from secondary modern pupils on risk acceptance at the en route stage. Grammar school climbers had a greater sense of uncertainty about the outcome of the climb and a lower feeling of being in control than did secondary modern school climbers. On the Summit, small differences were found again. Here secondary modern pupils differed from grammar school pupils by having a greater sense of challenge but also by having lower morale. No immediate theories spring to mind to explain these differences. What one could draw from the overall picture of similarities of attitude across the climb for incentive, risk acceptance and situational factors is that intelligence or home background associated with grammar schools had little differentiating effect on the responses of the climber.

#### **11.2.7. Other instructor rated variables:**

A consistent finding throughout this investigation is the lack of discrimination shown by a number of mainly biographical instructor rated variables;- age, ability, individual experience, group experience, fitness. What these findings seem to be indicating is that no matter what age you are, how competent you are, how experienced you are, how experienced the school and teachers are, how fit you are these variables seemingly have no significant influence on climbers' responses. Evidently these findings do not bring out the influence that one would expect from crucial variables normally necessary for successful mountaineering. Experience and fitness for instance are two variables that would play major roles in climbers decision making and ability to successfully

accomplish a climb especially in wilderness and often hostile environments. How competent or how skilful a person was in a given activity would also be seen as a determining factor in how well a person performed that activity. Climbing mountains is an exhausting and demanding activity where the fitness of the climber is often deemed an important factor in completing a climb successfully. Yet if these variables are to be taken at face value then none of them would have any significant influence on climbers' incentive, risk acceptance or situational factors at any stage of the climb.

On the face of it, it is surprising that variables so closely identified with climbers' competence and efficiency turn out to be non-discriminators. To understand why one needs to look at what has gone on before the expedition began and examine the preparation and pre-planning necessary for a climb. Although the groups were naturally-formed groups the age experience and ability of the group would have been matched with the difficulty of the climb and the route also chosen accordingly. Thus an experienced group would be given a much more difficult route than a less experienced group with the result that the challenge and demands of the climb would always be proportional to the risks encountered and the ability of climbers to cope with them. The net effect of this quite proper matching procedure is a neutralization of the influence of relevant variables in the present data.

Another more positive way of looking at this pattern of non-differentiation is to infer that the instructors/leaders and teachers had got the match correct, so that every individual was embarking on the adventure at an appropriate level in terms of ability, experience and fitness. In such a case, "differentiation" would not by definition occur. Of course, a degree of uncertainty still exists when climbers venture into the mountains. What will exactly happen cannot be fully known, but most of the eventualities and problems will have been foreseen. Climbers for instance will have been prepared to make their own judgements and to take decisions following sound mountain principles and codes of practice.

## **DISCUSSION OF RESULTS 2: CLIMBERS' PERCEPTIONS OF THE GROUP'S APPRAISALS.**

### **11.3.0 General Comment:**

For the "group" results, individuals had been to rate how they perceived not themselves but how the group would respond to the situation. Discussion here is again drawn from two kinds of data: first trends in mean ratings over the course of the climb, and second the regression links among these same sequential measures.

Again the results have been cast as a series of research questions which represent the components of the overall research problem.

### **11.3.1. STABILITY AND CHANGE IN CLIMBERS' PERCEPTIONS OF THE GROUP OVER THE COURSE OF THE CLIMB.**

#### **A. Mean ratings**

A comparison of the trends in mean ratings of the three concepts, Risk, Incentive, and Situation, over the stages of the climb highlights three main findings:

1. there is a general heightening (increase in ratings) as the climb progressed. This means that group members appear to the individual climber to show more incentive and greater acceptance of risk as the climber progresses to the top.
2. the predictions for the next stage were consistently underestimated.
3. the mean ratings perceived as holding for the group were consistently higher than the individual mean ratings throughout the climb.

## **B). Regression links between stages of the climb.**

The task here is to determine which variables remain stable or change as the climb develops. As Figure 9.22. shows Incentive shows clearly significant covariance for perception of the group between successive stages up to the summit thus indicating continuing stable view. The same is true for risk perspectives. The situational path shows no significant consecutive links at all.

In comparing these perceptions of "group" with self paths considerable similarity is evident. Risk paths, for instance, are identical. Incentive and Situational paths differ only slightly. From these joint data it can be inferred that each successive assessment during the climb does carry a sense of evolving continuity rather than just being impressions snatched at each break. The fact that discontinuity occurs for the retrospective ratings is not problematic because the climber is now no longer engaged in the experience of the climb which provides that linking force. The similarity between individual and 'group' data can be seen in two ways. First it can be taken as showing that the individual climber is an organic part of his or her group and accordingly perceives them as thinking and feeling like him/herself. Secondly, at a methodological level it can be taken as indicating that climbers cannot adequately separate their self' from other' assessments. This potential conflict is of course reminiscent of the argument as to why 'actual' and 'predictive' ratings about the next stage had such clear correspondence. It is probably safer to conclude that the data do show stability over the climb, but that the degree of stability may be overstated. The between-stages links themselves are unlikely to be distorted by climbers remembering and repeating what they put last time. Informal talking to climbers gave no hint of this as a strategy. Thus the inference of evolving continuity seems reasonable.

An important qualifier here is that although stability was rule at the factor level, differences of linking items were revealed from the breakdown analysis showing that the particular elements that came forward were changing from stage to stage. (see Figures 9.23, 9.24, and 9.25.)



### **11.3.2. DO INSTRUCTOR RATINGS DIFFERENTIATE CLIMBERS' ESTIMATES OF THE GROUP?**

#### **General Comment:**

The specific question to be asked here is, is it possible to find systematic differences in terms of these explanatory variables, given that climbers differ in the way they perceive their group during the expedition?

In a similar way to self perspective it turned out that only a few explanatory variables had any significant affect on the way in which climbers' viewed the group. However, although the majority of the significant explanatory variables were the same, there were also a number that did not feature in the self analysis, namely experience and fitness. There were other variations such as the fact that some explanatory variables influenced different stages of the climb from the case found for self perceptions. However it is clear that climbers did view the group perspective of the climb differently from their own self perspective and that some differentiation was also evident..

#### **A) Results for incentive.**

When the climber set out on the climb, incentive ratings for self and group perspectives were reasonably similar. At the first stop en route however no explanatory variable differentiated the group perspective, and only gender at summit had any affect. However, for the first time in either self or group perspective, prior experience and fitness ratings were significantly influential. One wonders here if the instructor's prior ratings do in fact now that the climb is over, match what the climber is thinking in more general terms. For instance, experience and fitness are really long term variables although examined here on a short term basis. The climber has a level of fitness that will probably not change over the climb. What might change is the climber's perception of his/her own or the group's level of fitness. In this case those climbers rated as the fittest felt that the level of challenge was not sufficient for their groups level of fitness - a fair enough observation.

However, one wonders why the climber's self perception was

different. Was it because the climber was happy to accept the fact that they had been successful? or was it because the climber felt that his/her fitness had been tested and therefore was of no influence. Experience is in a similar category in that one comes to the climb with a background experience, although the climb will add eventually to the climbers experience it does not do so while the climb is in progress. The group's view then, as sensed by the climber, is a more collective view reflecting the group's experience at that point in time.

It is also clear that group data follow a similar pattern to self data in that a number of explanatory (instructor-rated) variables play no part in differentiating climbers' ratings at any stage. These include the climber's ability, route difficulty, risk level, age and group experience. The suggestion that instructors/teachers by matching climbers ability with route difficulty, do in fact neutralize these factors seems just as valid here. Thus it can be said that some explanatory variables differentiate the climbers' estimates at some but not all stages.

## **B) Results for risk acceptance**

For these results, climbers' were asked to indicate how they perceived the group would respond to matters concerned with risk acceptance.

The results showed that a close similarity existed between group data and self data. The pattern of influencing explanatory variables was nearly identical, with the exception of commitment at setting out (self data) and experience (group data) on the summit. The explanatory variables of risk level and type of school were no longer of significance once the climber reached the summit, nor was gender after setting out, a similar finding as in the self analysis. Group status, commitment, and experience were influential on the summit, showing that each stage of the climb was affected by the explanatory variables differently.

The main indication that the individual was perceiving group risk acceptance differently from his own point of view lies in the constituent items of the risk factor. In the early part of the climb, very little

similarity existed, with willingness to accept risk and sense of control, being discriminatory items from the group data and confidence from the self data. However, by the time the climbers had reached the summit, differences between the group and self view gave way to similar items of supportiveness and un/certainty about the outcome of the climb.

Again it is clear that group data here follow a similar pattern to self data in that a number of explanatory variables play no part in differentiating climbers' ratings at any stage. These include biographical variables, climber's ability, fitness, and age; as well as non biographical such as route difficulty, group experience and weather conditions. With the exception of weather conditions these explanatory variables have been seen to be consistently ineffectual throughout the climb.

### **C) Results for situational factors.**

As no explanatory variable had any differentiating role in the self data at any stage the group data therefore is the only source of evidence to examine the effect of the explanatory variables on the climbers' situation. This is of particular interest where instructor estimates of route difficulty and weather conditions can be matched against the ongoing estimate from the climber. However as route difficulty did not feature as a differentiating explanatory variable the emphasis therefore must be on the remaining variable weather conditions. In fact a limited range of explanatory variables differentiate between the various needs and demands of the climb at different stages, namely gender, group status, commitment, weather conditions and age.

At setting out the prior instructor ratings of the weather conditions were found to be influential. This was further confirmed by the climber ratings where weather conditions were also found to be influential at this stage. In fact it was found that younger boys and girls had better weather conditions than older boys and girls. This may have been because instructors took younger climbers out only in good weather or they were not taken so high. Yet one wonders why this did not come to light in relation to the self data. This finding however would be in keeping with our explanation of how instructors monitor the capabilities, experience and

so on of climbers and match them to the expedition.

When climbers had returned to base weather conditions, commitment and group status were found to differentiate climbers' estimates.

On the whole, as found throughout this study, the instructor assessments of ability, experience, fitness, risk level had very little influence on situational factors. It seemed to make no difference whether this was the view of the individual or that deemed to be of the 'group'. Nor did group experience or type of school differentiate climbers' estimates.

### **11.3.3. CAN CLIMBERS PREDICT THEIR PERCEPTIONS OF THE GROUP DURING THE COURSE OF THE CLIMB?**

Evaluation of how fellow members of one's climbing team are doing is an on going process throughout a climb. This is an important process to the climber, because without having some knowledge of how others are coping with the climb, individuals might not be able to fully assess their own likelihood of succeeding. What is also important is being able to predict future consequences and possible reactions the group as a whole might have about changes in their future status. Climbing is a team activity where success is dependent on the performance of each member of the team. This may mean that the pace of the slowest, dictates the pace for the group, because to do otherwise could put undue stress on that person where the consequence could cause an accident or at least a physical break down. However, predicting future events in climbing is not an easy matter, but by drawing comparisons from their own experience and by being aware of changing situations climbers can be better prepared for the climb ahead.

Climbers here were asked to predict the group's assessment of Incentive, Risk acceptance and Situational variables at different stages of the climb. It seems that climbers had difficulty in predicting group views on incentive and to some extent risk acceptance scores, but were much more likely to predict successfully what their situational scores for the group would be. This seems to point to the possibility that direct contact

with the environment gives climbers a better insight to the likely happenings ahead. This is an important factor in climbing, because evaluation of the developing climb is paramount for ultimate safe completion of the climb.

#### **11.3.4. WHAT LIMITS CLIMBERS' ABILITY TO PREDICT THEIR PERCEPTIONS OF THE GROUP OVER THE CLIMB?**

As with the self assessment it is valuable to know how far the group predictions are being limited by prior actual ratings. Climbers' predictions will be based on what has been experienced with the group, so far, therefore for actual ratings to have some limitation on predictions is inevitable. This 'real' component may however be exaggerated by some covariation which often occurs with measures taken at the same time. An examination of the determinant items of predictors confirmed that embeddedness and covariance existed. However, in terms of incentive and risk acceptance it seems that climbers' predictions about the group were very much influenced by the previous actual ratings. Whether this accounts for the climbers' inability to make accurate predictions or not is not clear but it does point to the fact that climbers may be able to make predictions about their future status if they were not already confounded by their present status. However, the picture was different for situational links. Actual ratings had only limited effect on the climbers' predictions about the group. Perhaps because incentive and risk acceptance are both psychologically based concepts, the climber might have found difficulty in projecting the groups' psychological view from the view which was being expressed at the immediate or actual stage. However, because the situational factors were based on practical observations about the groups' physical state and the environmental cues, the climber was in fact able to discriminate between ratings made 'now' and those that were predictive with much more success. If this is the case then climbers cannot be entirely blamed for their inability to predict the groups' future status which means that actual ratings do have some limiting effect on predictions but not perhaps to the extent the data might lead us to believe.

# **CHAPTER TWELVE**

## **CONCLUDING REMARKS AND RECOMMENDATIONS FOR FURTHER RESEARCH.**

12 1. The investigation has explored the psychological make-up of young climbers, while undertaking an expedition in wilderness and mountainous country. The feelings and attitude of the climber were examined through the climber's self perception and perception of the group using real groups in natural settings.

### **12.1.1 Incentive:**

In general terms the present findings are consistent with Carron (1977) and with Silva (1984) when they discuss motivation in terms of the intensity and direction of behaviour. The indication here is that climbers are particularly concerned with incentives; the climber's feelings about the strength or importance of incentive increased as the climb progressed and then fell as the climb was completed.

Emerson (1966) and Roberts (1974) predicted that motivation would be greatest when the task was perceived to be of intermediate difficulty, as in the present study where realistic goals were always set throughout the climbs. On this point, Botterill (1978), and O'Block and Evans (1984) emphasise the importance of setting realistic goals where commitment and confidence can be increased by goal planning. This might account for why at setting out instructor ratings of climbers' commitment did discriminate. The continuing effect could be felt too, as the climb progressed, especially at en route if climbers positively evaluated the long and short term goals as established at the planning phase (Creel, 1980; Hague, 1980). Rutland (1979) found from his study

that the climber would, " overcome substantial increments in difficulty " if the goal was of sufficient importance to the climber. Hackman and Oldham (1980) found a positive relationship between task difficulty and performance. Alderman and Wood (1976), found that children are basically motivated by the same incentives, regardless of age, gender and culture. In the present study a similar finding was obtained where gender and type of school attended had minor differentiating roles and age had none. Another finding from this study, similar to that of Alderman and Wood, was in relation to their Sport Specific Incentive System, where affiliation (cooperation and supportiveness in this study) was found to be one of the top items. The importance of independence or not having an adult leader as an incentive, however, was not as clear cut, because groups with a leader saw the climb from time to time differently from those without a leader.

Implications: It is important that climbers are able to set reasonable and realistic goals for themselves which are challenging but achievable. Climbers need to achieve and be able to affiliate with fellow climbers. They also need to be in control of themselves and the situation, so that they can cope with the stress inherent in any climb. Leaderless groups or self-reliant groups have a better opportunity of participating in the decision making process, but do so with less knowledge and experience than instructor led groups. However, the implication of this study is that ability, experience and fitness factors could be made non problematic by careful planning and matching of groups to route difficulty. In addition, climbers' incentive levels were found to be consistently higher than risk acceptance and situational levels. Instructors and leaders need to be aware of this so that, as Rutland (1979) found, climbers do not exceed their level of difficulty. The general feeling of the climber seems to follow Csikszentmihayli's flow experience where self esteem, excitement, fun and satisfaction are an integral part of the climbing experience.

### **12.1.2. Risk Acceptance:**

Climbers choose to climb because of the stressful nature of the activity, yet paradoxically, as Harris (1977) points out, individuals are also motivated to reduce dissonance by reducing the uncertainty of the activity. The novice climber might find difficulty in balancing the level of acceptable risk with sound safety measures, although, in the present study, climbers were able to determine their level of uncertainty with some degree of success. The link between incentives and acceptable risk is where climbers begin to compare the rewards or gains offered before deciding whether to accept the risk. Williamson (1981) and Myer (1979) found that many accidents were attributable to accepting increased levels of risk. The present study found the mean evaluations made about the group were consistently higher through the climb than the evaluations by climbers about themselves, showing that the perceived group view was seen as riskier than the individual climber's. Perceived group incentives were also higher than the individual climbers'. However, Helm (1984) and White (1978) point out that degree of risk is largely dependent on how far participants decide to go beyond their skill competency. This being the case, climbers need to be able to evaluate their ability and general competence in varying situations with some degree of accuracy. Helm (1974) and Williamson (1981) found that climbers thought they could actually control genuine mountain hazards through their own competence and concentration. Miscalculation of competence or failure to recognise hazardous conditions could then put the climber into a dangerous situation. The importance of getting it right needs emphasising because, as Helm (1974) reminds climbers, half of all mountain accidents are caused by natural or objective hazards. Nevertheless Ewart (1984) feels it is crucial for young climbers to be allowed within the risk management programme to make their own decisions in relation to risk and hazard, so that climbers can learn to make correct decisions.

The implications take in instructors or leaders as well as the climber, because instructors need to realize that perceived risk is just as



motivating and challenging as objective risk. Thus there is no need for climbers to be put into a genuinely dangerous situation. Climbers need, to be given and to accept the opportunity for independent thought and decision making, but in a context where the group and the individual can come to a decision on what is the best course of action to be taken for the success and welfare of the group. In the present study, climbers consistently underestimated or at least mis-estimated predictions made for the next stage in the climb. Like incentive predictions, risk acceptance predictions were mainly adrift. This does not mean climbers cannot predict their future status at all but it does mean that their judgements are not always reliable. Therefore instructors need to take care with climbers and know how much responsibility and independence they can cope with at any given time in their climbing development.

A number of other points call for brief comment. Different gender responses were found at setting out for self and perceived group ratings, but not at any other stage. Grammar school children reacted differently from secondary modern children en route with respect to risk acceptance but not at any other stage. Risk acceptance ratings were also influenced en route by climbers with higher risk levels. Thus it can be seen that the evaluation of the explanatory variables on the climber's risk acceptance ratings, while not large, could be of benefit to the instructors in their task of climber assessment. Psychological as well as physical condition then need to be taken into consideration, especially if climbers embark on self-reliant expeditions.

### **12.1.3. Situations:**

Mean ratings show that this was an area where the climber was highly conscious of his own physical limitations and the changing context of the climb, especially the effect of the change in terrain. Although the demands of the climb when viewed from the perspective of the three situational factors were mainly physical each person was able to cope and to achieve the level of difficulty they had undertaken. This was particularly borne out by the group view at en route and on return to the basecamp where route difficulty was seen as easy. It seems climbers are

aware that progress is determined by the weakest members of the group because climbers were increasingly supportive and cooperative in the later part of the climb. This can also be confirmed by observation of the groups throughout the climb, because the group worked at the pace of the weakest, and often the slowest, climber. Further, those climbers who found the going difficult were often given verbal encouragement by other members of the group and practical help by stronger climbers who assisted weaker climbers by carrying some of their load for them. Incentive and risk measures taken at the summit and basecamp further highlight this observation, with committed climbers showing greater supportiveness and greater cooperation with the group than less committed climbers. Interestingly, the level of commitment affected the climbers' perception of weather conditions with the more committed climbers viewing weather as favourable when the less committed ones saw it as adverse.

Some confirmation of agreement between instructors and climbers about weather conditions would have been found if those weather conditions predicted by the instructor prior to the expedition and those by the climber during the expedition had been found to correlate. As it happened, no situational factors were differentiated by instructor-rated variables, and no helpful correlations were found. However, from the group viewpoint significant instructor-rated variables were found substantiating estimates at setting out and at base camp (retrospective). Here, weather conditions, an instructor-rated variable, were found to influence the climbers' estimates of weather conditions at both stages.

Wankel (1980) suggested that researchers should examine situational factors, - " how a given factor influences an individual's behaviour is contingent upon the individual's subjective interpretation of that situation." They should also, "pay greater attention to how situational factors influence an individual's subjective interpretation of the social context (its nature and importance) - the task requirement - his or her performance capabilities - the potential outcomes and perceived importance."

Implications: The demand of the climb and the route difficulty needed to be known and thus the importance of preparation and pre-planning cannot be overemphasised. For groups to operate in safe but challenging environments, over-estimation of ability has to be avoided along with under-estimation of the difficulty of the terrain.

#### **12.1.4 Limitations of the Study as a Whole.**

Although the very nature of intervention research means that conventional research expectations of methodology and procedure are not likely to be fully realized. A number of limitations to the study seem evident in hindsight, From the inception of this naturalistic study the researcher knew and accepted that some limitations were inevitable but as far as possible safeguards were included in the methodology to minimise any predictable shortcomings.

Data gathering proved to be more difficult than at first envisaged particularly with teenagers of limited concentration span. En route areas for data collection were carefully selected but as discussed in the text mountain tops are not easy places for a group to sit down and complete data cards.

Instructor ratings of the climbers experience, ability and so on were made at the beginning of the climb and only at one time rather than as for the climber, in replying to the Incentive, Risk and Situation questions, contemporaneously at each stage. In addition instructor ratings were made subjectively, although the experienced instructor's 'gut' feelings about the climbers was considered by the researcher as good as any objective measure.

The number of participating schools was dictated by the availability of the expedition centres and the school attending. The omission for instance of comprehensive schools was because of this factor. A number of schools were for various reasons unable satisfactorily to complete the data gather cards. This would have increased obviously the numbers of decisions available for analysis, in particular the

number of participating girls. The researcher feels that these limitations have only a minor bearing on the results but mentions them here so that due account can be taken where appropriate.

In relation to the question order e.g. actual ratings followed by predictive ratings, some provision could have been made, especially in the light of the possible limitation effect of the actual ratings on the predicted ratings, for question order to be varied. This, however might equally have confused the climber.

## **12.2. Explanatory variables revisited.**

In general, the contribution of the "prior explanatory variables" was only moderate. Although from the distribution instructors were evidently able to use the scales, it could have been that they were not using them validly. Additionally, different variables could of course have been examined in relation to influences on climbers' incentive, risk acceptance and situational assessments. However, the present set appears comprehensive. Tom Olick's book, "In Pursuit of Excellence," (1980) lists a number of concepts similar to those given here. Both sets of factors were compiled independently, which suggests that some convergent validation for each.

It will be useful at this point to reexamine the effectiveness of these explanatory variables. It will be recalled that variables were of three kinds: 1) Straight factual/biographical variables, such as age and school; 2) Psychological variables (instructor assessed) such as commitment and ability; 3) Environmental variables (also instructor assessed) such as weather and route difficulty.

Figure 12.2 provides a summary of variable effectiveness. The explanatory variables are shown in the left margin acting on the self or "group" ratings for incentive, risk acceptance and situation, shown as the columns. Entries in the table then indicate where there was a significant influence at a particular stage.

# RESULTS: INSTRUCTOR-RATED VARIABLES ACROSS THE CLIMB

STAGE	INCENTIVE				RISK				SITUATION			
	Actual (Self)				Actual (Self)				Actual (Self)			
	1	2	3	4	1	2	3	4	1	2	3	4
GENDER			●		●			●			●	
AGE RANGE											●	
ABILITY												
EXPERIENCE								●				
FITNESS												
RISK LEVEL	●				●			●				
COMMITMENT		●			●	●		●		●		●
GP. STATUS	●	●			●		●			●		●
GP. EXPERIENCE												
SCHOOL TYPE			●		●			●				
ROUTE DIFFICULTY												
WEATHER CONDITIONS		●		●			●			●		●

### **12.2.1 Biographical variables.**

Biographical or factual variables which did not hinge on any assessment of the instructor, were consistently influential throughout the climb and across the incentive, risk acceptance and situational factors. Group status (presence or absence of adult leader) is a good example and to a lesser degree, gender and type of school. Group experience did not feature in any way for self or group ratings. Age was not a significant factor for the self ratings but was a minor differentiator in the group ratings.

### **12.2.2. Psychological variables (instructor-rated).**

For these instructor rated variables, commitment was easily the major consistent significant variable for both self and group ratings. Experience, fitness and ability did not differentiate climber ratings at any time for self ratings, although experience and fitness had a minor differentiating role for group ratings. Risk level also had some limited influence.

### **12.2.3. Non-personal variables.**

The main differentiating variable here was weather conditions. It figured as a major differentiator for incentive, risk acceptance and situational factors, and for both self and group ratings. Instructor rating of route difficulty was not influential anywhere on the climb.

To summarize, the major area of differentiation centres on group status or whether the group is self-reliant or not. The question of leadership then, and the responsibility for decision-making seems to be central, particularly for climbers' incentives. Instructor assessments of commitment seem the biggest single differentiator of risk acceptance and to a lesser degree of incentives. The prevailing weather on the day of the climb was a major factor in determining in particular levels of incentive.

#### **12.2.4. General comment.**

The young climber, having planned and prepared for the trip for a number of months needed no motivating when the time for the expedition had come. Thus once the climb was under way high incentive scores were to be expected. Less expected, yet making sense, was the way in which incentive and risk acceptance ratings increased during the climb then dipped at the completion in retrospect.

Prediction proved more difficult. It is obviously important for climbers to be able to make judgements about how the climb is going to turn out and how well the climber is going to be able to cope with the varying conditions. The physical state of individuals as well as of the party needs to be anticipated particularly for safety reasons. As it turned out, situational or environmental factors were predicted with some degree of consistency and accuracy, while psychological factors were poorly estimated. Researchers in general accept the fact that it is not easy to predict future status of people or events e.g. Jones (1974) and Gill (1984). As discussed earlier, limitations could also have arisen from the "actual" ratings taken at the same time, as indeed could the fact that young climbers were making rather specific micropredictions compared with the broad macropredictions which experienced climbers normally make about "the way it will be" at later points in the climb.

#### **12.2.5. Alternative to questionnaire data.**

Although there is no reason to doubt the value of the present questionnaire data, other methods of acquiring the data do of course exist. In fact in the present study some video and tape recordings were taken for use as fall-back data to help clarify ambiguities. In the event their use was not necessary. Still photographs were also taken, and a selection of these has been incorporated in the preceding text.

In general, the more data-gathering apparatus that is evident the more the potential problem of reactivity. However in the present study, climbers did not appear to be "acting up", and it may be there is so

much equipment around anyway on an expedition that cameras and tape recorders are no longer intrusive, especially with the increasing trend to miniaturisation.

For a closer study of how group processes and situational factors influence the climber, video and tape recordings could offer then a further research tool. Observation of groups and their formation and development in mountaineering could be examined so that an in-depth investigation could be mounted of levels of support, cooperation and morale, ideally through longitudinal studies over several climbs. Spontaneous reactions during the climbs could be captured by mini (pocket) tape recorders if video cameras proved to be too intrusive.

### **12.3 Recommendation for further research.**

#### **12.3.1. General**

In the light of the foregoing comments which summarize the most significant findings of the present study, some pointers are offered as to the direction that further research might take. As Donaldson et al (1972) point out research topics should be targeted according to priority of need rather than pursuing those that are easy and convenient to investigate.

#### **12.3.2. Incentive recommendations**

Mitchell (1983) suggests in his study of American attitudes towards mountaineering, that "understanding how the whole community views mountaineering provides further insight into climbers' motives" He found a positive attitude towards climbers was held by the majority of those interviewed in his survey. Gender interestingly made little difference in the valence of comments, although attitudes varied considerably by region, with the most affirmative or accepting views expressed in the Northeast and West. In a broad sense it would be interesting to find out whether there were comparable regional variations in attitudes to mountaineering in Great Britain or other European countries. However, the following observations relate more to the psychological or person-by-situation domain of the climber as appropriate for the present research.

The present study examined "self-reliant groups" but found a



number of unanswered questions. Self-reliance seems to be a particularly promising area for further investigation because it is by being self-reliant that individuals assume responsibility and exercise decision-making skills. How young climbers come to make decisions in mountain situations may well then show how decisions are to be tackled in other aspects of life, assuming leadership qualities can be maintained, encouraged and fostered in those displaying such qualities. Similarly, those climbers who prefer to affiliate rather than lead the group can be given help and advice in their supportive role.

Some educationalist believe that through mountaineering, self esteem, self discipline and many character-building aspects can be developed and enhanced. For example, Royce (1987) argues that self-development should be the initial focus in educational terms rather than the mere provision of enjoyable experiences. He affirms the first educational objective should be "finding out about self and self-awareness." He suggest that research should continue analyzing youngsters' experiences and their growing knowledge, and skills. Adventure experiences hold much potential for exposing school-age children to relevant learning experiences. Further research, therefore, might focus on the merits of experiential learning methods. As McNeill (1988) points out, there are benefits, particularly with junior school children in linking normal classroom subjects such as creative writing, mathematics and nature study, with the environment. In particular, orienteering, could be included as a curricular activity where junior school children can practise decision-making skills so as to build up confidence and foster self-reliance.

### **12.3.3. Risk acceptance recommendations**

The present study has highlighted some factors of social psychological importance, with implications for the responsibilities of teachers, leaders and those in charge of young people, as well as the benefits that challenge and adventure can offer youngsters in their search for self-awareness. However, Cripps and Dallos (1984) suggest how social psychological factors can be examined further. They pose a

research question perhaps too difficult to answer, namely, "What happens when control breaks down entirely due to stress?", with the implication that if control breaks down, a life could be lost. The present study went some way to answer this question in terms of realistic settings, but did not at any time reach the point where real danger was present. Student studies in Chapter 3. perhaps came closest to this with groups leaving the decision-making to fewer and fewer people, when control looked like being lost, an observation that Klein (1956) and Laswell and Kaplan (1951) had also made. Cripps and Dallos take their research question further by suggesting that "the more a group is accustomed to meeting practice crises the better it should survive, if a real one develops." Research testing the limits of seasoned climbers is one thing but the testing of young climbers to such limits should not occur. The point being made here is where young climbers are concerned the question that Cripps and Dallos pose is more a philosophical question than a practical research proposal.

#### **12.3.4 Situational recommendations**

Few would argue, says Grey (1984) about the overall short-term benefits of expeditions and residential experiences, but he questions the long term effect on the youngsters. Do young climbers reflect on their achievements? Do any achievements made affect their career or life style and does the experience mean anything when viewed in later years from a mature and dispassionate perspective? According to Grey (1984), very little scientific research has been done to address such questions. The obvious choice here would be to set up some longitudinal studies. Grey's own small-scale enquiry centred on Arctic, Norway and Iceland expeditioners and the effect of their expedition experiences on future academic career, employment, personality and relationships (particularly related to self-confidence, tolerance, and friendship). The need for further research in this area seems evident both for expedition leaders and participants.

Many of the benefits that are assumed to accrue from outdoor

activities and mountaineering in particular seems to emphasise the interaction between youngsters and the environment which such activities embody. Collester (1984) suggests, at first surprisingly, that youngsters could benefit just as much from being introduced to projects, skills and involvement in urban settings. Those who enjoyed this introduction could then progress from city to countryside. Indeed, the romantic view of nature may not be as attractive to children as we believe. The "one-off" experience of orienteering or even rambling in an area of outstanding natural beauty may have value but how much? Community courses in urban surroundings have been set up in cities such as London, Birmingham, Manchester and Liverpool, so that the development and social awareness of children and their potential for adventure experiences can be studied. The trend where there is space and potential is for problem-solving games to be constructed and for low-technology adventure facilities to be set up near to people's homes (Care, 1988). The expansion of interest which now includes "mums", lower primary school children and play leaders, is going to call for much more planning, careful thinking and research into provision for outdoor activities. The changing emphasis will also call for more subtle input from leaders than embodied in the traditional instructor role.

Mountaineering has much to offer in relation to self-knowledge and understanding, but it is also par excellence, a medium for learning through physical activity rather than through verbal communication. Nevertheless, the present study has endeavoured to investigate the practical nature of the experiences of climbers in groups and in natural settings as viewed through the perceptions of youngsters and their teacher-instructors. It is hoped therefore, that this thesis has shed some light on to the processes by which young climbers come to gain their love of climbing and find fulfilment in the experience.

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## APPENDIX 1      ADDITIONAL RESULTS.

### i) TRENDS IN MEAN RATINGS OVER THE COURSE OF THE CLIMB

	Incentive	
	Individual Mean	Group Mean
Setting out	3.77	3.83
S.O. Predictive	3.66	3.72
En Route	3.97	4.02
E.R.Predictive	4.00	4.07
Summit	4.17	4.11
S. Predictive	4.17	4.19
Return	4.05	4.12

	Risk Acceptance	
Setting out	3.64	3.69
S.O. Predictive	3.61	3.69
En Route	3.75	3.82
E.R.Predictive	3.82	3.94
Summit	3.91	3.96
Predictive	4.03	3.86
Return	3.70	3.81

	Situation	
Setting out	3.60	3.58
S.O. Predictive	3.12	3.17
En Route	3.77	3.83
E.R.Predictive	3.46	3.54
Summit	3.57	3.63
S. Predictive	2.82	3.12
Return	3.62	3.80

**ii) MEANS AND STANDARD DEVIATION OF INSTRUCTOR  
RATING VARIABLES:  
BREAKDOWN BY CLIMBER BIOGRAPHICAL VARIABLES.**

**TABLE A1            GENDER. 1 MALE.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.882	.816	2	5	76
FITNESS	3.513	.622	2	5	76
EXPERIENCE	2.882	.832	2	5	76
RISK LEVEL	3.474	.503	3	4	76
ROUTE DIFF.	2.763	.814	2	4	76
WEATHER CO.	3.737	.597	2	4	76
COMMITMENT	3.658	.703	1	4	76

**TABLE A2            GENDER: 2 FEMALE.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.364	.492	2	3	22
FITNESS	2.955	.575	2	4	22
EXPERIENCE	2.136	.640	1	3	22
RISK LEVEL	2.773	.612	1	4	22
ROUTE DIFF.	2.273	.456	2	3	22
WEATHER CO	3.273	.456	3	4	22
COMMITMENT	3.591	.734	2	4	22

**TABLE A3      TYPE OF SCHOOL 1 - GRAMMAR/TECHNICAL**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	3.157	.784	2	5	51
FITNESS	3.608	.666	2	5	51
EXPERIENCE	3.137	.800	2	5	51
RISK LEVEL	3.549	.503	3	4	51
ROUTE DIFF.	3.020	.836	2	4	51
WEATHER CO	3.765	.651	2	4	51
COMMITMENT	3.961	.196	3	4	51

**TABLE A4      TYPE OF SCHOOL 2 - SECONDARY MODERN.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.340	.522	2	4	47
FITNESS	3.149	.551	2	4	47
EXPERIENCE	2.255	.642	1	4	47
RISK LEVEL	3.064	.604	1	4	47
ROUTE DIFF.	2.255	.441	2	3	47
WEATHER CO	3.489	.505	3	4	47
COMMITMENT	3.298	.883	1	4	47

**TABLE A5**                      **AGE RANGE: 1. 14 to 15 years.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.564	.564	2	4	32
FITNESS	3.313	.693	2	4	32
EXPERIENCE	2.438	.759	1	4	32
RISK LEVEL	3.188	.780	1	4	32
ROUTE DIFF.	2.375	.492	2	3	32
WEATHER CO	3.250	.440	3	4	32
COMMITMENT	3.656	.653	2	4	32

**TABLE A6**                      **AGE RANGE: 2. 15 to 16 years.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.817	.873	2	5	60
FITNESS	3.383	.640	2	5	60
EXPERIENCE	2.767	.851	2	5	60
RISK LEVEL	3.317	.469	3	4	60
ROUTE DIFF.	2.667	.795	2	4	60
WEATHER CO	3.800	.605	2	4	60
COMMITMENT	3.600	.764	1	4	60

**TABLE A7            AGE RANGE: 3. 17 to 18 years.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	3.333	.516	3	4	06
FITNESS	3.833	.408	3	4	06
EXPERIENCE	3.667	.516	3	4	06
RISK LEVEL	4.000	.000	4	4	06
ROUTE DIFF.	4.000	.000	4	4	06
WEATHER CO	4.000	.000	4	4	06
COMMITMENT	4.000	.000	4	4	06

**TABLE A8            GROUP EXPERIENCE: 1. INEXPERIENCED.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.212	.466	2	4	52
FITNESS	3.135	.525	2	4	52
EXPERIENCE	2.077	.436	1	3	52
RISK LEVEL	3.115	.615	1	4	52
ROUTE DIFF.	2.000	.000	2	2	52
WEATHER CO	3.769	.425	3	4	52
COMMITMENT	3.346	.861	1	4	52

**TABLE A9      GROUP EXPERIENCE: 2. EXPERIENCED.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	3.391	.577	2	5	46
FITNESS	3.674	.668	2	5	46
EXPERIENCE	3.435	.583	2	5	46
RISK LEVEL	3.543	.504	3	4	46
ROUTE DIFF.	3.391	.493	3	4	46
WEATHER CO	3.478	.722	2	4	46
COMMITMENT	3.978	.147	3	4	46

**TABLE A10      GROUP STATUS: 1. ACCOMPANIED.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	2.525	.626	2	4	59
FITNESS	3.220	.589	2	4	59
EXPERIENCE	2.475	.751	1	4	59
RISK LEVEL	3.153	.611	1	4	59
ROUTE DIFF.	2.508	.679	2	4	59
WEATHER CO	3.390	.670	2	4	59
COMMITMENT	3.441	.836	1	4	59

**TABLE A11 GROUP STATUS: 2. UNACCOMPANIED.**

VARIABLE	MEAN	STD	MIN	MAX	N
ABILITY	3.128	.864	2	5	39
FITNESS	3.641	.668	3	5	39
EXPERIENCE	3.077	.870	2	5	39
RISK LEVEL	3.564	.502	3	4	39
ROUTE DIFF.	2.872	.864	2	4	39
WEATHER CO	4.000	.000	4	4	39
COMMITMENT	3.949	.223	3	4	39

## **APPENDIX 2.      FURTHER GRAPHS: COMPARISONS.**

Figure G1. Comparison of actual self and group with predictive self and group for components of the Risk Factor.

Figure G2. Comparison of actual self and group with predictive self and group for components of the Incentive Factor.

Figure G3. Comparison of actual self and group with predictive self and group for components of the Situational Factor.



**FIGURE G.1. Comparison of actual self and group with predictive self and group for components of the Incentive Factor.**

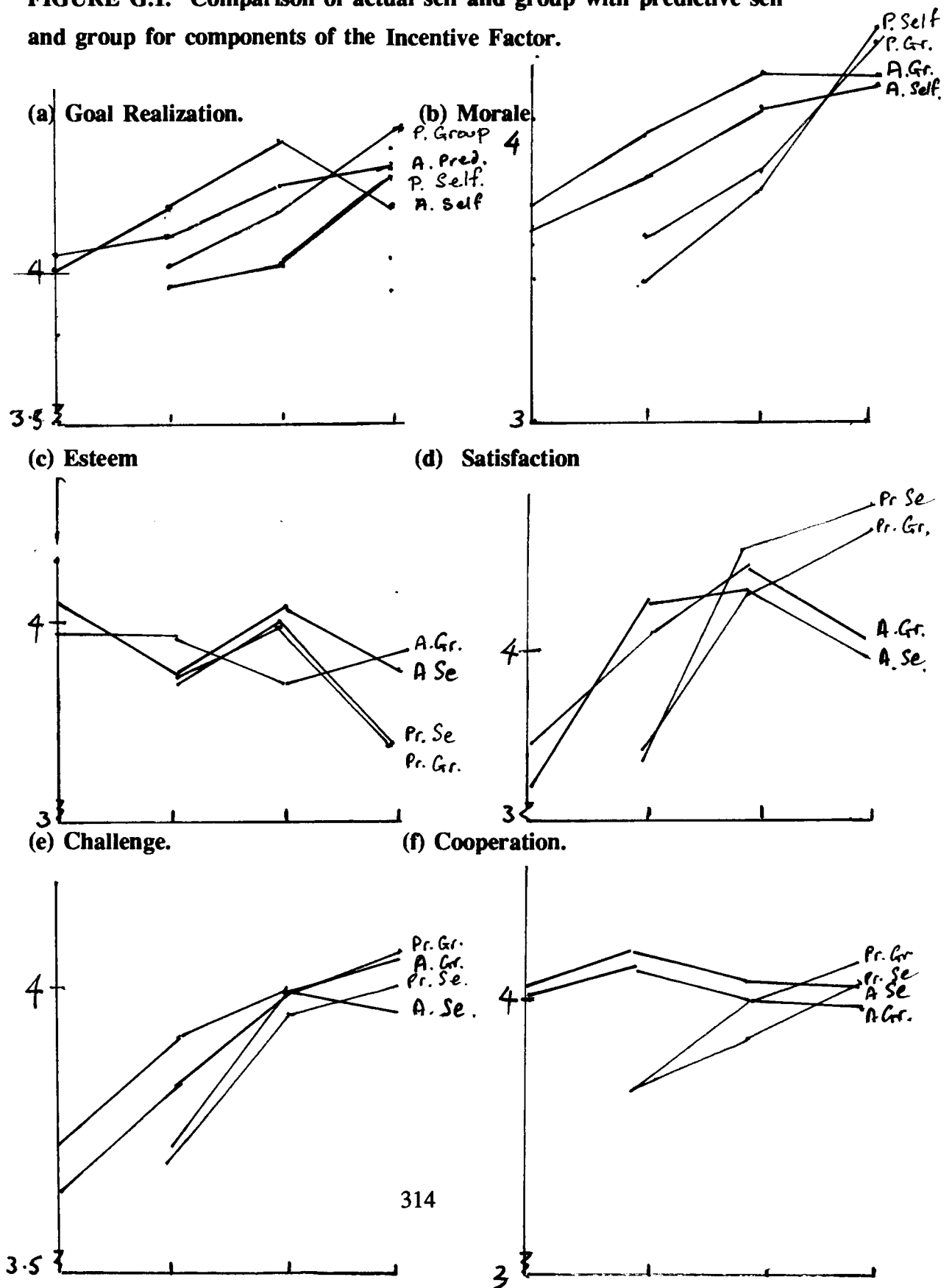
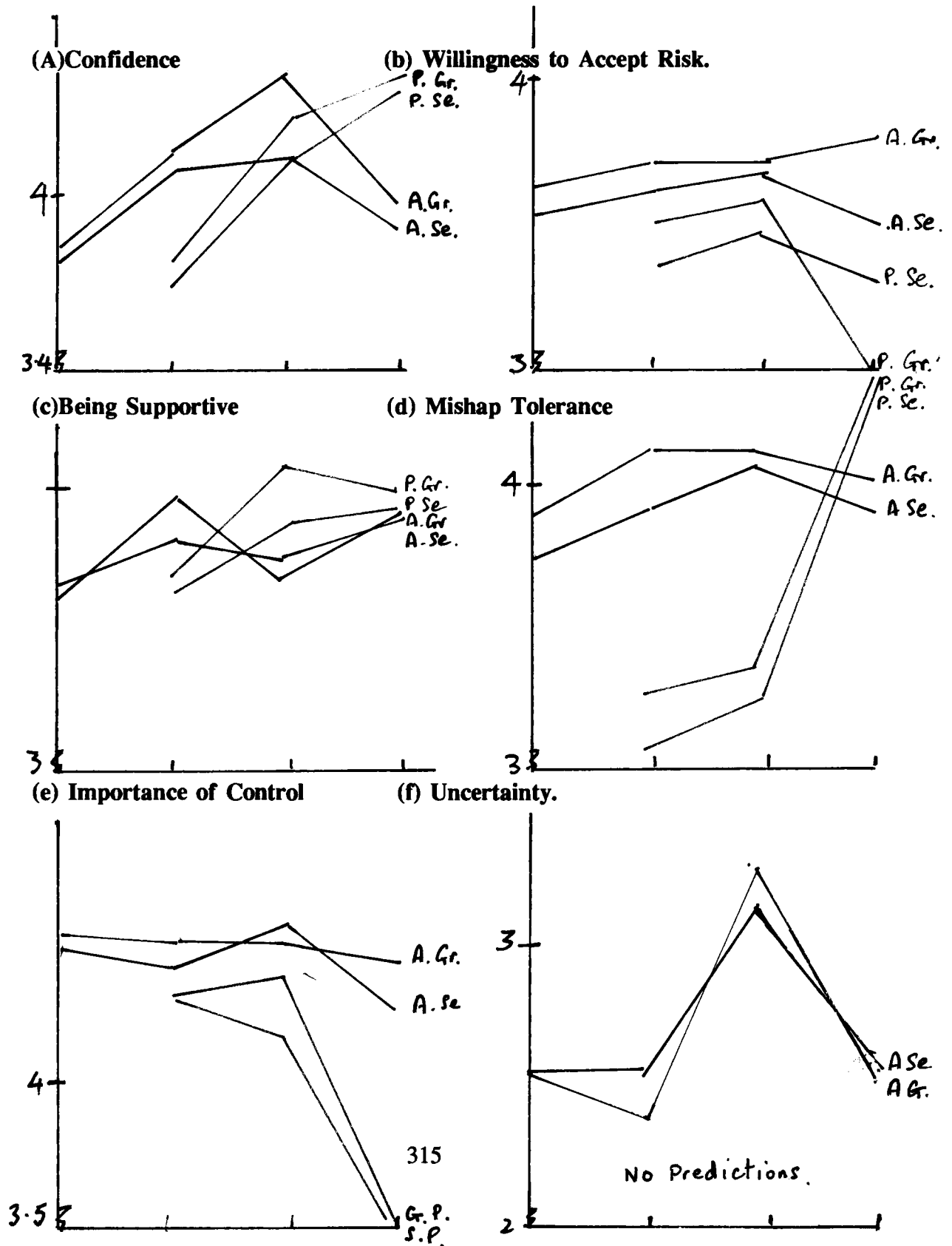
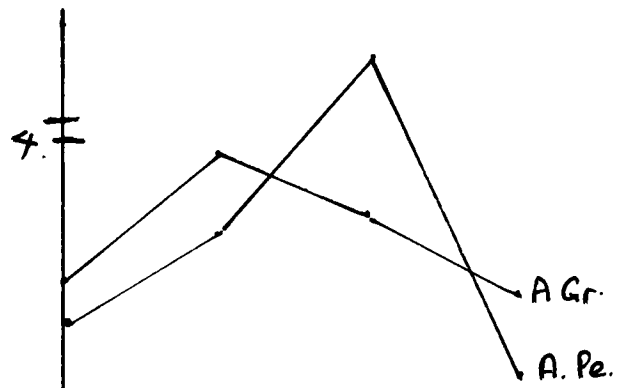


FIGURE G2. Comparison of actual self and group with predictive self and group for components of the Risk Factor.

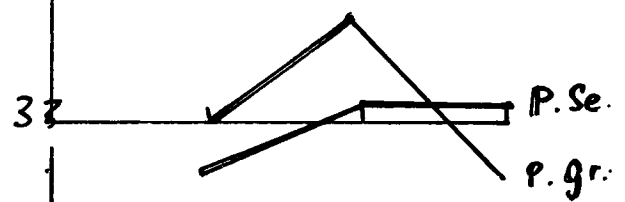


**FIGURE G3. Comparison of actual self and group with predictive self and group for components of the Situational Factor.**

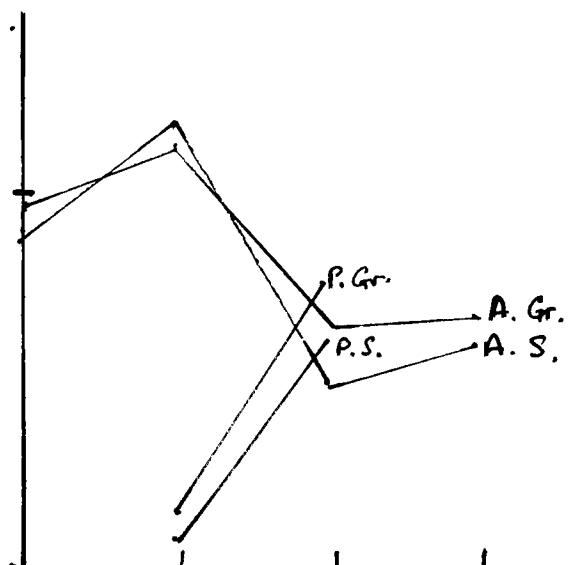
**a) Physical Condition.**



**(b) Route Difficulty.**



**(c) Weather Conditions**



### **APPENDIX 3.      LETTER TO HEADTEACHERS:**

Dear Headteacher,

I am investigating risk taking in mountaineering groups for a Ph.D. My study area is centred upon school groups undertaking an expedition. The enquiry hopes to find out how individuals respond to decisions within the group and how groups as a whole respond in decision-making situations. In order to ascertain what goes on between group members and what individuals feel while undertaking an expedition questions such as the following will be asked: - Do climbers evaluate their situation when on expedition? What kind of incentives motivate climbers? How do groups come to a collective decision? What part does the leader play in the group?

I am writing to ask for your assistance in this work. The county advisor has recommended your school as one which could make a worthwhile contribution to this research. In order that I might outline the research project in more detail I would like to visit the school and discuss what it entails with yourself and those responsible for the outdoor education programme within the school.

May I point out that there is very little empirical research work going on in this area, so that your assistance would be most valuable.

As your school is scheduled to visit the Mountain Centre next term, I wonder if I may visit the school this term so that any arrangements and planning can be started as soon as possible.

Thanking you in anticipation of your assistance,

Yours sincerely,

## **APPENDIX 4.**

### **QUESTIONNAIRE.**

#### **MOUNTAIN EXPEDITION**

#### **"Setting Out"**

1a

How important is it to achieve your goal?. How important is it for the group?

1b

Predict how important it will be to achieve your goal, when you reach point B? Predict how important it will be for the group to achieve their goal at B?

2a

Assess the level of your morale now. Assess the level of the group's morale.

2b

Predict your level of morale at point B. Predict the group's level of morale at point B.

3a

How challenging is this expedition? How challenging for the group is this expedition?

3b

How challenging do you think the expedition will be at point B ? How challenging do you think the group will find it?

4a

How satisfied are you with the expedition? How satisfied is the group with the expedition?

4b

Predict how satisfied with the expedition you will be at point B. Predict the group's degree of satisfaction with the expedition at B.

5a

Assess your feelings of self esteem. Assess the sense of esteem within the group.

5b

Predict your level of self-esteem at point B. Predict the level of esteem within the group at Point B.

6a

Assess how cooperative you have been within the group. Assess the level of cooperation within the group.

6b

Predict your level of cooperation with the rest of the group up to Point B. Predict the level of cooperation within the group up to point

7a

How confident are you in your own ability and efficiency?. How confident are you of the group's ability and efficiency?

7b

How confident of these do you expect to be at point B? How confident do you expect the group to be in their own ability?

8a

How willing are you to accept risk? How willing do you think the group are to accept risk?

8b

Predict the level of risk you would be willing to accept when you reach point B. Predict the level of risk the group might be willing to accept.

9a

How supportive do you think you are to the rest of the group? How supportive are the group to you?

9b

Predict how supportive you will be at Point B. Predict how supportive the group will be at Point B.

10a

If a minor accident were to occur, about half an hour into the expedition, how willing would you be, to continue with the expedition? How willing would the group be?

10b

If an accident was to occur later around point B, how willing would you be to continue then? How willing do you think the group would be to continue?

11a

How important is it for you now to be in control of yourself and the situation? How important is it for the group to be in control of themselves and the situation?

11b

Predict how important the matter of control will be by the time you get to point B? Predict the level of importance for the group.

12a

Assess your present physical condition. Assess the condition of the group.

12b

Predict your physical condition when you reach Point B. Predict the condition of the group at point B.

13a

Assess the level of difficulty of the route up to point B. Assess how difficult the group would rate it.

13b

Predict the level of difficulty from point B. Predict the group's assessment of the level of difficulty from point B.

14a

Assess the weather conditions. How would the group rate the conditions?

14b

Predict the weather condition for when you reach Point B. Predict the group's assessment of the conditions.

15

Assess your uncertainty to the outcome of the climb. Assess the group's uncertainty.

Thank you for your help

## **MOUNTAIN EXPEDITION**

## **"En Route"**

1a

How important is it to achieve your goal?. How important is it for the group?

1b

Predict how important it will be to complete the expedition, when you reach the top? Predict how important it will be for the group to achieve their goal?

2a

Assess the level of your morale. Assess the level of the group's morale.

2b

Predict your level of morale as you near the top. Predict the group's level of morale near the top.

3a

How challenging is this expedition? How challenging for the group is this expedition?

3b

How challenging do you think the expedition will be as you near the top? How challenging do you think the group will find it?

4a

How satisfied are you with the expedition so far? How satisfied is the group with the expedition?

4b

Predict how satisfied with the expedition you will be close to the top. Predict the group's degree of satisfaction with the expedition.

5a

Assess your feelings of self esteem. Assess the sense of esteem within the group.

5b

Predict your level of self-esteem when you reach the top. Predict the level of esteem within the group at the top.

6a

Assess how cooperative you have been so far within the group. Assess the level of cooperation within the group.

6b

Predict your level of cooperation with the rest of the group up to the top. Predict the level of cooperation within the group up to the top.

7a

How confident are you in your own ability and efficiency?. How confident are you of the group's ability and efficiency?

7b

How confident do you expect to be as you near the top? How confident do you expect the group to be in their own ability?

8a

How willing are you now to accept risk? How willing do you think the group are to accept risk?

8b

Predict the level of risk you would be willing to accept 'en route' to the top. Predict the level of risk the group might be willing to accept.

9a

How supportive do you think you have been so far to the rest of the group? How supportive have the group been?

9b

Predict how supportive you will be up to the top. Predict how supportive the group will be up to the top.

10a

Feeling as you do, if a minor accident were to occur now, how willing would you be to continue with the expedition? How willing would the group be?

10b

How willing would you be to continue, if a mishap were to occur somewhere from the top? How willing do you think the group would be to continue?

11a

How important is it for you to be in control of yourself and the situation? How important is it for the group to be in control of themselves and the situation?

11b

Predict the level of importance to you of being in control of yourself and the situation as you near the top. Predict the level of importance for the group of being in control of themselves and the situation.

12a

Assess your present physical condition. Assess the condition of the group.

12b

Predict your physical condition when you near the top. Predict the condition of the group near to the top.

13a

Assess the level of difficulty of the route. Assess how difficult the group would rate it?

13b

Predict the level of difficulty of your return route. Predict the group's assessment of the level of difficulty of the return route.

14a

Assess the weather conditions. How would the group rate the conditions?

14b

Predict the weather condition for when you return to base. Predict the group's assessment of the conditions.

15a

Assess your uncertainty now as to the outcome of the climb. Assess the group's uncertainty to the climb.

Thank you for your help.



## **MOUNTAIN EXPEDITION**

## **"On Top"**

1a

How important has it been to achieve your goals? How important has it been for the group?

1b

Predict how important it will be to complete the expedition. Predict how important it will be for the group to complete the expedition.

2a

Assess the level of your morale now. Assess the level of the group's morale now.

2b

Predict your level of morale when you arrive at base. Predict the group's level of morale when they arrive at base.

3a

How challenging has this expedition been? How challenging for the group has this expedition been?

3b

How challenging do you think the expedition will have been when you are back at base? How challenging do you think the group will have found it?

4a

How satisfied are you with the expedition so far? How satisfied is the group with the expedition?

4b

Predict how satisfied with the expedition you will be when you arrive at base. Predict the group's degree of satisfaction with the expedition at base.

5a

Assess your feelings of self esteem. Assess the sense of esteem within the group.

5b

Predict your level of self-esteem when you arrive at base. Predict the level of esteem within the group at base. 6a

Assess how cooperative you have been within the group. Assess the level of cooperation within the group.

6b

Predict your level of cooperation with the rest of the group during your descent to base. Predict the level of cooperation within the group on the descent to base.

7a

How confident are you in your own ability and efficiency now.? How confident are you of the group's ability and efficiency now.?

7b

How confident do you expect to be in your own ability and efficiency as you complete the expedition? How confident do you think the group to be?

8a

How willing are you to accept risk now.? How willing do you think the group are to accept risk now.?

8b

What level of risk would you be willing to accept for your return route? Predict the level of risk the group might be willing to accept.

9a

How supportive do you think you have been to the rest of the group.?

How supportive have the group been.?

9b

Predict how supportive you will be on the return journey. Predict how supportive the group will be.

10a

If a mishap were to occur on your return journey, how willing would you be to remain with the injured person.? How willing would the group be to remain with the injured person (presuming that somebody goes for help.)

11a

How important is it for you to be in control of yourself and the situation.? How important is it for the group to be in control of themselves and the situation.?

11b

Predict the level of importance to you of being in control of yourself and the situation as you return to base. Predict the level of importance for the group of being in control of themselves and the situation as they return to base.

12a

Assess your physical condition now. Assess the condition of the group now.

12b

Predict your physical condition when you reach base. Predict the condition of the group at base.

13a

Assess the level of difficulty of the route just completed. Assess how difficult the group would rate it?

13b

Predict the level of difficulty of your return route. Predict the group's assessment of the level of difficulty of the return route.

14a

Assess the weather conditions now. How would the group rate the conditions now?

14b

Predict the weather condition for the return route. Predict the group's assessment of the conditions.

15

How important is it now to have got to the top? How important is it for the group?

Thank you for your help. WELL

DONE.

## **MOUNTAIN EXPEDITION**

## **"Retrospective"**

1

How important was it to achieve your goal?. How important was it for the group?

2

Assess the level of your morale now. Assess the level of the group's morale now.

3

How challenging was this expedition? How challenging for the group was this expedition?

4

How satisfied were you with the expedition? How satisfied were the group with the expedition?

5

Assess your feelings of self esteem now. Assess the sense of esteem within the group now.

6

Assess how cooperative you were within the group. Assess the level of cooperation within the group.

7

How confident were you in your own ability and efficiency? How confident were you of the group's ability and efficiency?

8

How willing were you to accept risk? How willing do you think the group were to accept risk?

9

How supportive do you think you have been to the rest of the group? How supportive have the group been?

10

How willing to continue with the expedition would you have been, if an accident had occurred? How willing would the group have been to continue with the expedition?

11

How important was it for you to be in control of yourself and the situation? How important was it for the group to be in control of themselves and the situation?

12

Assess your physical condition now. Assess the condition of the group.

13

Assess the difficulty of the route. Assess how difficult the group felt the route was?

14

Assess the prevailing weather conditions. How did the group rate the prevailing weather conditions?

15

Just how uncertain were you of achieving a successful outcome of the climb? How uncertain was the group?

16

How important was it to get to the top of the mountain? How important was it for the group?

17

How realistic do you think your goals were? How realistic were they to the group?

18

How challenging do you think your goals were? How challenging were they to the group?

19

Do you think you worked as a unit?

20

How important was a sense of pride to you? How important was it to the group?

21

How satisfied were you with your own performance? How satisfied were you with your groups performance?

22

How much did you feel responsible for your own actions?

23

Did you feel secure in your own judgements?

24

Who do you think had the most influence on you? Who had the most influence on the group?

25

How much did the assessment of situations by other members help you to make up your mind.?

26

How much did the collective energy of the group stimulate you to higher achievements?

27

Was discomfort from adverse weather conditions a barrier to your and the groups enjoyment?

28

How well do you think you were able to predict weather conditions? How well were the group able to predict weather conditions?

29

How much do bad weather conditions sap the morale of the group?

30

How much do you think bad weather conditions draw a group together?

31

In predicting the successful outcome of the expedition, how important was weather condition in your assessment?

32

How important was the manner of getting to the top of the mountain?

33

How much do you think the group evaluated each persons performance?

34

- How well did you predict your bodies responses to the expedition?  
35
- How often were you willing to take responsibility for any of the decisions?  
36
- How far did you appreciate the strengths and weaknesses of your team mates?  
37
- How often did you experience fear and anxiety?  
38
- How far were you able to accept the dominance of others?  
39
- How far would you accept a dangerous situation?  
40
- How important would you rate leaders?  
41
- Assess your experience.  
42
- Assess your skill/ability/competence.  
43
- Assess you fitness level.  
44
- Assess the standard of the equipment you were using.  
45
- Assess your willingness to be successful.  
Assess the importance of the contribution the following made on your decision making:-  
46
- ...knowing other group members views  
47
- ...having available the collective knowledge and information from the group.  
48
- ...discussing out the available options.  
49
- ...having a distinct leader.  
50
- ...the performance of the group so far.  
51
- ...the maintenance of the group welfare so far.  
52
- ...the willingness of the group to be successful.  
53
- ...the ability/performance of the weakest member of the group.  
54
- Did you assess risk in relation to yourself or the group?  
55
- How important was the risk level to the whole group?  
56

How much was this an adventure?

57

How much did you feel that you belonged to this group?

58

How threatening were the group when you felt tired?

59

How far did you discuss problems with other members of the group?

60

How far did you go along with the groups decision, when you knew it to be dangerous?

Thank you very much for your help.

## **APPENDIX 5**

### **INFORMATION TO TEACHERS AND INSTRUCTORS:**

#### **MOUNTAIN EXPEDITION.**

##### **General explanation.**

The survey consists of four questionnaires, log books, reports and tape recordings of discussions.

The first stage of the enquiry is only concerned with the four questionnaires (Q's):

Q1. 'Setting Out' will be administered just before the group go out on their expedition.

Q2. 'En Route' will be given to the group at a significant point in the climb (point B), which ought to be at least half to two thirds of the way to the top.

Q3. 'On Top' will be given on top or when the main goal has been achieved.

Q4. is to be given when the group have returned to the centre.

### **Requests to Instructors**

a) An important part of the procedure for this survey is for the Instructors to read the questions to the group, please read the questionnaires through carefully yourself first. If there is anything you do not understand, please discuss this before going out.

b) Please make sure that you do have the requisite number of answer cards. Each questionnaire is colour coded.

c) You should have four questionnaire cards. Obviously only two cards need to be taken on the expedition. ('en route' and 'on top')

The success of the whole venture really depends on your careful handling of each situation, for which, I thank you.



### **Questionnaire 1.'Setting out'**

Please brief your group where and when to meet you to complete this first Questionnaire. Try and make it the last thing if possible, before going out.

Please make sure that everyone can hear you and then remind them that each question is in two parts. The first part of the question asks them to think for themselves the second part asks them to think for the group. Do not let them confer or discuss any of the questions with anybody else.

Please read slowly and clearly.

Read each part twice with a pause for thought in between.e.g.

Read:- Q.1a 'How important is it to achieve your goal?'      Pause  
then read it again.

Q.1a' How important is it to achieve your goal?'      Pause  
and then read

'How important is it for the group?'      Pause

' How important is it for the group?'

Give them time to complete their answer. Then read Q.1b and subsequent questions in the same manner.

Answer any queries. When they have completed all the questions please collect all the cards.

Now allow the group to discuss the situation and make up their minds what course of action to take. Where possible please tape any discussion.

## **Questionnaire 2.'En Route'**

When you have come to a point of significance in the climb,(point B in our predicted assessment) assuming that some hard physical work has been put in with possibly 1/2 to 3/4 of the way achieved. Find a convenient place to stop and give each of them an 'en route' answer card. Please make sure that everyone can hear you and then remind them that each question is in two parts. The first part of the question asks them to think for themselves the second part asks them to think for the group. Do not let them confer or discuss any of the questions with anybody else.

Please read slowly and clearly.

Read each part twice with a pause for thought in between. e.g.

Read:- Q.1a How important is it to achieve your goal?'

Pause then read it again.

Q.1a' How important is it to achieve your goal?' Pause and then read

'How important is it for the group?' Pause

'How important is it for the group?' Give them time to complete their answer. Then read Q.1b and subsequent questions in the same manner.

Answer any queries. When they have completed all the questions please collect all the cards.

Now allow the group to discuss the situation and make up their minds what course of action to take. Where possible please tape any discussion.

### **Questionnaire 3. On the Summit**

When you have arrived at the main goal or on top of the mountain give everybody the chance to take pictures and enjoy their achievement, then get them together and give each of them the appropriate answer card.

Please make sure that everyone can hear you and then remind them that each question is just as before in two parts. The first part of the question asks them to think for themselves the second part asks them to think for the group. Do not let them confer or discuss any of the questions with anybody else.

Please read slowly and clearly.

Read each part twice with a pause for thought in between. e.g.

Read:- Q.1a 'How important is it to achieve your goal?'

Pause then read it again.

Q.1a 'How important is it to achieve your goal?' Pause and then read

'How important is it for the group?' Pause

'How important is it for the group?' Give them time to complete their answer. Then read Q.1b and subsequent questions in the same manner.

Answer any queries. When they have completed all the questions please collect all the cards.

Now allow the group to discuss the situation and make up their minds what course of action to take. Where possible please tape any discussion.

#### **Questionnaire 4. 'On Return'**

When you arrive back at base, or as soon after as possible, give them the 'ON Return' questionnaire. Please follow the same procedure as previously.

Please make sure that everyone can hear you and then remind them that each question is in two parts. The first part of the question asks them to think for themselves the second part asks them to think for the group. Do not let them confer or discuss any of the questions with anybody else.

Please read slowly and clearly.

Read each part twice with a pause for thought in between. e.g.

Read:- Q.1a 'How important is it to achieve your goal?'

Pause then read it again.

Q.1a 'How important is it to achieve your goal?' Pause and then read

'How important is it for the group?' Pause

'How important is it for the group?' Give them time to complete their answer. Then read Q.1b and subsequent questions in the same manner.

Answer any queries. When they have completed all the questions please collect all the cards.

## **Log Books**

A log is a detailed account of what you have done and how you achieved it. In addition could you please make comments on how you think things went good and bad.

The following headings could help as a guide:-

1. Description of the preparation and planning including your goal.
2. Equipment used.
3. Special instructions.
4. Members of the group including the Instructor.
5. Details of the route with names and map references. Also give some description of the type of terrain encountered.
6. Note on problems and how they were resolved.
7. Any special incidents.
8. Weather conditions.
9. Comments on the day.
10. Own feelings.

Date and signature

**Video Recordings:** Video recordings of two expeditions undertaken by groups can be obtained at cost by writing to the author at Goldsmiths' College, University of London, New Cross, London, SE.14. 6NW.

**APPENDIX 6.     ROUTE INFORMATION:**

RI 1. Example of en route check point sheet re state of the party.

RI 2. Route Description Questionnaire.

RI 3. Example of route plan information sheet.

RI 1. Example of en route check point sheet re state of the party.

D of E

---

GROUP members:

g. Thompson Babara McPhee  
Williams St. Hilda

DATE Monday TIME 10.00

PROBLEMS ?

Not a  
Sausage

NEXT SCHEDULED MEETING

## RI 2. Route Description Questionnaire.

### Route Description.

1. Broad path clearly marked; no steep ascents; slightly longer than other routes; rugged but not exposed.
2. A pathway clearly marked; some steep ascents; rugged throughout but with few exposed positions.
3. Small pathway not always clear; a number of steep ascents; small amount of rock climbing; rugged throughout; some exposed positions.
4. Route traceable; many steep ascents; rock scrambling / climbing necessary very rugged throughout; many exposed positions; some section of ridge to walk.
5. Route uncertain some very steep ascents; some climbing; very rugged terrain indeed; majority exposed ridge with steep drop either side.

1.	Easy	1 2 3 4 5 6 7 8 9 10
2.	Moderately Difficult	1 2 3 4 5 6 7 8 9 10
3.	Difficult	1 2 3 4 5 6 7 8 9 10
4.	Very Difficult	1 2 3 4 5 6 7 8 9 10
5.	Severe.	1 2 3 4 5 6 7 8 9 10

Please ring preference for Route.  
and strength of feeling for that  
Route. 1. being not very strongly  
to 10 being very strongly indeed.

Thank you for your help.



**RI 3. Example of route plan information sheet.**

# ROUTE INFORMATION SHEET

Plan: example

DATE: 1ST MAY!  
PAGE NO: 1

GROUP MEMBERS	4	B. HEND
1. VADUTAN	5	N. ROBERTS
2. N. ARMSTRONG	6	T. O'DONNELL
3. N. ARMSTRONG	7	

EMERGENCY CONTACT  
(0622)  
813065

STARTING POINT OF STAGE	GRID REF	MAGNETIC BEARING	DIST.	TOTAL DIST.	HEIGHT GAIN	SUBSET TIME	TIME DIST	ALLOWED HEIGHT	FOR TOTAL	E.T.A. FOR STAGE	TIME TOTAL	NOTES
LONG BEACH ENCLOSURE	250125	210°	2 1/2	2 1/2	20	9:00	37	2	40	9:45	60	ALSO: 30 MIN ENCLOSURE PROJECT : 20 MINS
CAOMANS POOL	230122	200°	2 3/4	5 1/4	15	10:00	42	2	45	10:45	2:05	PROJECT : 20 MINS
MILHAM ENCLOSURE/PICNIC*	216102	090°	3 3/4	9	25	11:05	56	3	60	12:05	4:05	PROJECT: 20 MINS CENCT: 40 MINS
DEER SANCTUARY/ PICNIC SITE	243086	165°	1 3/4	10 3/4	-	1:05	25	-	25	1:30	4:40	10 MIN REST
PARKING	247072	235°	2	12 3/4	-	1:40	30	-	30	2:10	5:30	PROJECT: 20 MINS
Picnic SITE *	249056	270°	3	15 3/4	35	2:30	45	2	45	3:15	6:45	PROJECT: 20 MINS
LUCY <del>CENTRAL</del> Picnic SITE	226046											Leave Long Beach through outreach enclosure, past road to N. Oakley Drive Road S.S.W., path S.E. again road to N. Oakley Drive Path E., along boundary of Shutter enclosure, join road E., cross ASCT, <del>past</del> Deer Sanctuary, Sullivan Drive Track S.S.E. then S. along Sullivan Drive to parking place and junction with paths. Path S.W. then S / S.S.E. past N. Oakley enclosure, through enclosed helipad to parking picnic site. Track W. join road S.W. past Southwood Cottage, cross Epping to picnic site at Lucy Hill.
EMERGENCY/ESCAPE PROCEDURE												Notes for calculation of times.

- \* - message drops

## Notes for Calculation of Times.

Full pack: 4 km/hr. Pruss

10 minutes for 100m ascent.

Day Page: 5/11/18

**PAGES 339 REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES**

**Ordnance Survey map showing Snowdon and the Conwy Valley**

**(See Map sheet number OL17 in the OS Explorer map series)**

**APPENDIX 7.     FURTHER PLATE  
ILLUSTRATIONS**

**Plate 1. Coming off Cnicht N. Wales.**

IMAGE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES







